

TOSHIBA

Color Television

OWNER'S MANUAL

CX35F70



SET UP

PREPARATION

BASIC OPERATION

ADVANCED
OPERATION

EQUIPMENT
CONNECTIONS

REFERENCE
SECTION

Dear Customer

Congratulations! You have purchased one of the finest Color TV's on the market!

This manual will help you use the many exciting and useful features to make your TV viewing more enjoyable than ever before.

Before operating your TV set, please read all these safety and operating instructions completely and then retain for future reference.

Customer's Record

You will find the model number and serial number on the back of your TV set.

Record these numbers in the spaces provided below. Refer to them whenever you call upon your TOSHIBA dealer regarding this product.

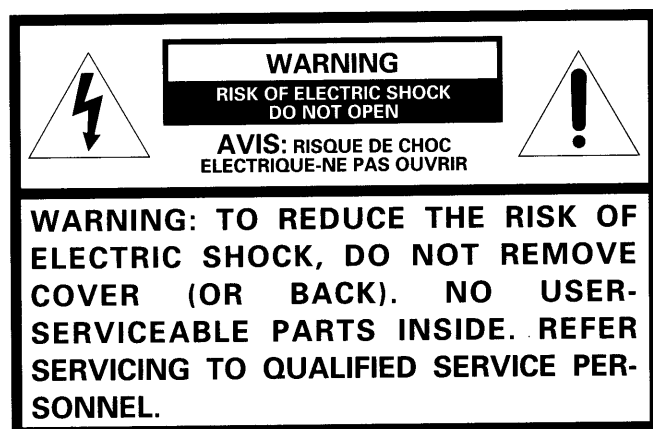
Model Number _____

Serial Number _____

Safety Precautions

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



The lightning symbol in the triangle tells you that the voltage inside this product may be strong enough to cause an electric shock. DO NOT TRY TO SERVICE THIS PRODUCT YOURSELF.



The exclamation point in the triangle tells you that important operating and maintenance instructions follow this symbol.

This TV set may be used only with TOSHIBA stand model ST3503. Use with other stands may result in instability causing possible injury.

CAUTIONS:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE PRONGS CAN BE FULLY INSERTED INTO THE OUTLET TO PREVENT ANY EXPOSURE OF THE PRONGS ON THE POLARIZED PLUG.

ATTENTION:

POUR PRÉVENIR LES CHOCs ÉLECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉS À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

Avoid displaying stationary images on your TV screen for extended periods of time. Stationary patterns generated by PIP display, computer displays, video games, stock market reports, etc. can become permanently engrained on the picture tube. This damage is not protected by your warranty as it is the result of misuse. Should you wish to use your TOSHIBA Television to display still images, it is always advisable to reduce brightness and contrast settings. Never leave a PIP display, computer display or video game display unattended.

NOTE TO CATV SYSTEM INSTALLER IN THE USA:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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Installing your TV Set

Where to install

Place the TV on the floor or on a sturdy platform. The mounting surface should be flat and steady.

Lighting

Do not place the TV in a room where direct lighting strikes the screen. Use soft and indirect lighting.

Air circulation

Place the TV far enough from the walls to allow proper ventilation. This will prevent the TV from overheating and avoid possible damage to the TV. Avoid dusty places too.

Power supply

Plug into an electrical outlet with standard household power (120 volt AC, 60Hz). Do not change the plug's safety prong. See the right column.

WARNING :

TO AVOID PERSONAL INJURY

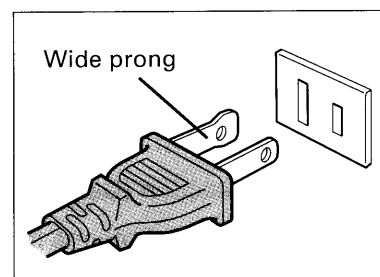
- Do not stand or climb on the TV.
- Do not put a VCR or any heavy object on top of the TV.

CAUTION :

As a safety feature, the plug has one prong wider than the other. It will fit only one way into a standard electrical outlet. If the plug will not fit into the outlet, try turning it around. If the plug will not fit either way, the outlet is probably old and non-standard.

You will need to have a new outlet installed by an electrician.

DO NOT CHANGE THE SAFETY FEATURE OF THE PLUG.



Antenna/Cable TV General Information

You can use either an indoor or outdoor antenna to receive VHF and/or UHF channels. Channels 2 - 13 are VHF channels, and channels 14 - 69 are UHF channels. We recommend using an outdoor antenna for better picture quality. You can receive Cable TV by connecting the cable supplied by your local cable company.

Types of antenna cables

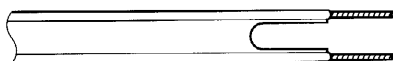
Shown below are two basic types of antenna cables. Signals from a home antenna may be conveyed by either type. Cable TV signals will always be conveyed by a 75 ohm coaxial cable.

- 1 A 75 ohm coaxial cable is generally a round cable with an F-type connector that can easily be attached to a terminal without tools.

F-type connector (Not supplied)



- 2 A 300 ohm cable is a flat "twin-lead" cable that can be attached to a terminal using an antenna adapter supplied as an accessory.



Antenna connection panel

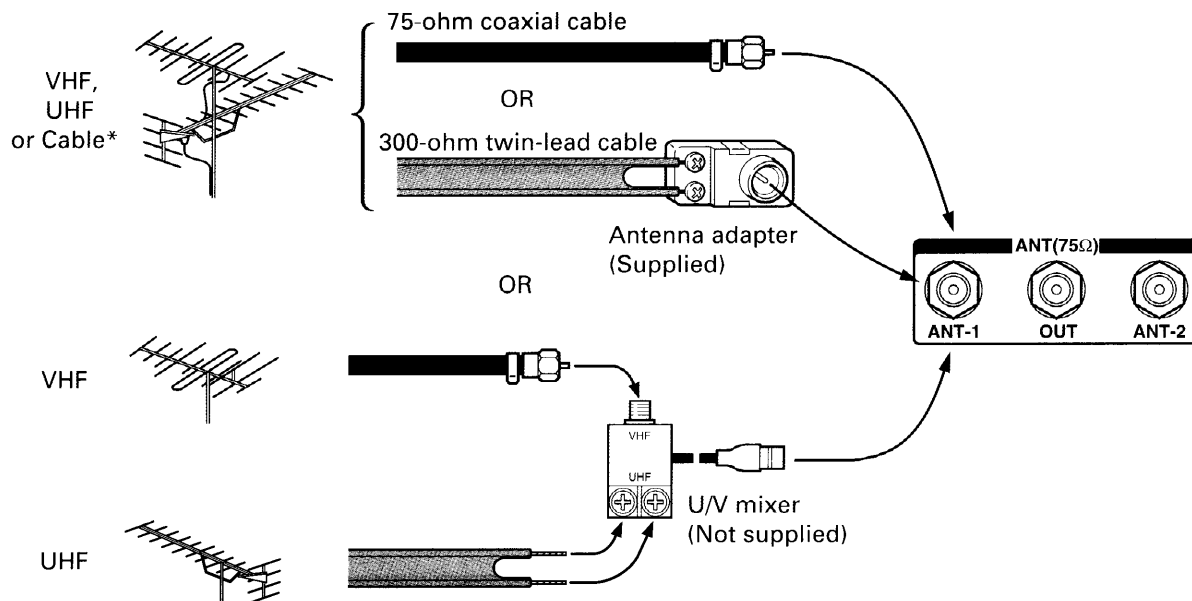
There are two separate 75 ohm F-type connector terminals and a converter output terminal as shown below.



The ANT-1 and ANT-2 terminals are for connecting a VHF/UHF antenna or a cable TV system. The signal, which is input through the ANT-1 terminal, is also output from the OUT terminal whenever the antenna input is set to the "ANT 2" mode. You can switch between the "ANT 1" and "ANT 2" modes by using the SET UP menu or by pressing the ANT/VIDEO button on the TV. See page 16.

Antenna/Cable TV Connection

Connecting an antenna or Cable without a decoder box



Notes:

- * Generally, the incoming cable for a Cable TV system can be connected directly to the TV antenna terminal just like a home antenna connection. You will be able to receive unscrambled cable channels.
- You can connect another source such as a home antenna or video game to the ANT-2 terminal.

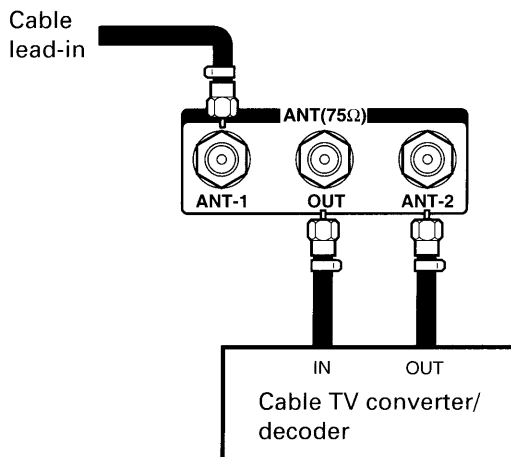
Connecting a Cable with a decoder box

Some cable companies offer "premium pay channels". Since the signals of these premium pay channels are scrambled, a cable TV converter/decoder is generally provided to the subscriber by the cable TV company. This decoder box is necessary for normal viewing the scrambled channels. For more specific instructions on installing cable TV, consult your cable TV company.

You can choose between viewing unscrambled channels and scrambled channels by using the SET UP menu or by pressing the ANT/VIDEO button on the TV. See page 16.

Unscrambled channels will come through the ANT-1 terminal when the "ANT 1" mode is selected. The scrambled channels from the decoder box will come through the ANT-2 terminal when the "ANT 2" mode is selected. Select channel 3 or 4 on your TV to match your converter's output channel and select channels using the converter's channel keys.

Note: The descrambler device may or may not be a part of the cable converter.



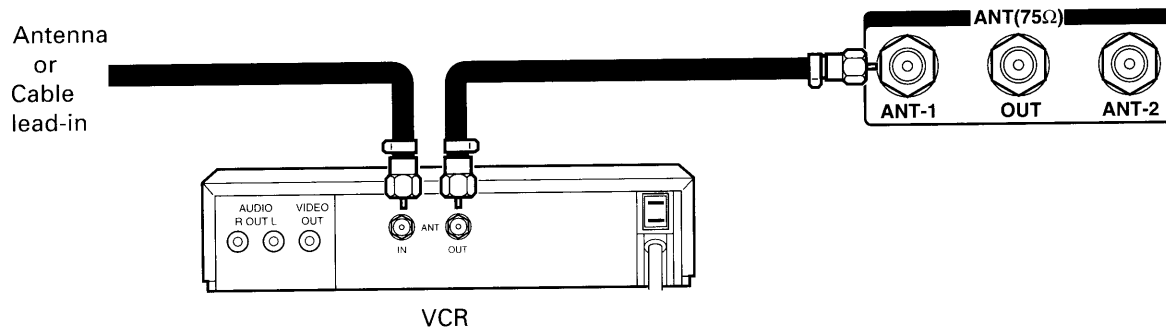
SET UP

Installing your TV Set/ Antenna/Cable TV General Information/ Antenna/Cable TV Connection

Antenna/Cable TV and VCR Connections

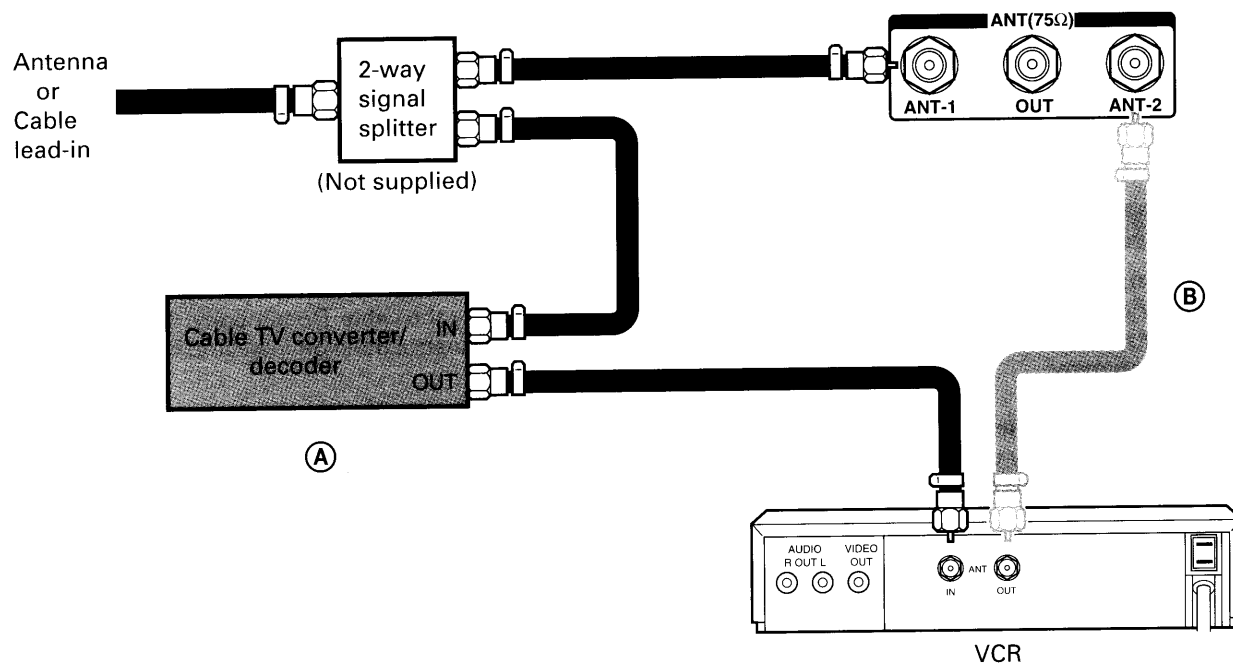
After antenna cable connections are made, you are still required to connect the VCR using video/audio connecting cables. See page 40.

Antenna/Cable TV connection via VCR (simplified method)



Note: On many VCR's, playing tapes causes the VCR's TV/VCR switching to disconnect the antenna signals from the TV. If you cannot select a certain channel, try pressing the TV/VCR button on the Remote Control.

Using a 2-way signal splitter

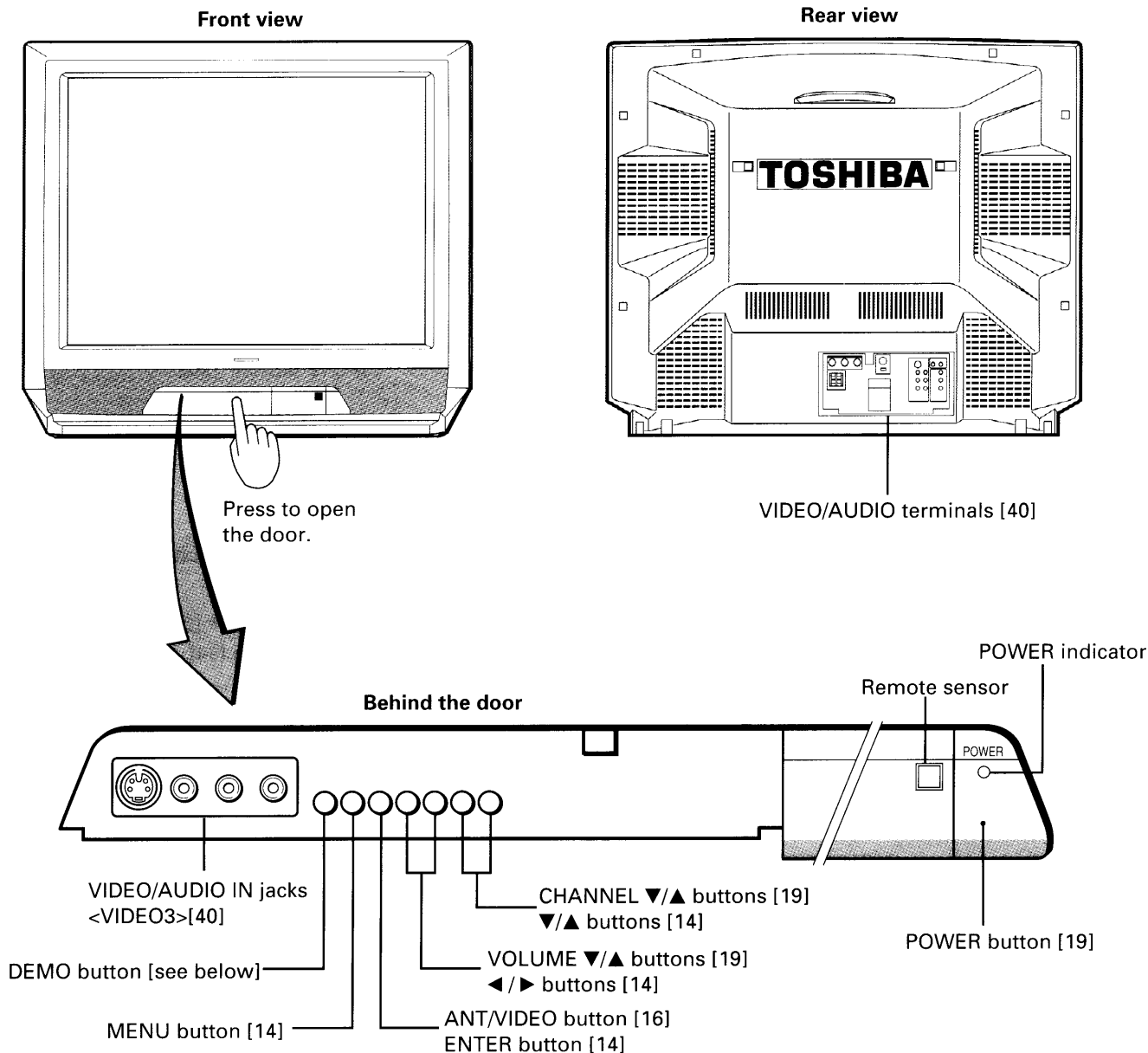


Notes:

- When connecting a cable TV converter/decoder (A):
 - The unscrambled channels will come through the ANT-1 terminal whenever the antenna input is set to the "ANT 1" mode.
 - The scrambled channels from the decoder box will come through the VCR and the ANT-2 terminal whenever the antenna input is set to the "ANT 2" mode. Select channel 3 or 4 on your TV and VCR to match your converter's output channel. See page 16.
- The cable (B) connection is necessary only when the cable TV converter/decoder (A) is connected.

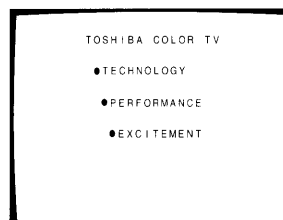
Location of Controls (TV Set)

For specific use of each control, refer to pages in brackets.



DEMO button

The on-screen demonstration starts about 4 seconds after you press this button. Your TV automatically displays a variety of its on-screen menus and special features. This function is provided for demonstration purpose only. To stop the demonstration, press **DEMO** again.



SET UP

PREPARATION

Antenna/Cable TV and VCR Connections
Location of Controls (TV Set)

Only the buttons that are used to operate the TV set are described here.
For details on the use of each control, refer to pages in brackets.

The diagram shows a Toshiba remote control with the following labeled components:

- Top Section:**
 - TIMER button* [27]
 - TV-CABLE-VCR switch (Set to "TV" to control the TV.)
 - TV/VIDEO button* [41]
 - RECALL button* [20]
 - POWER button [19]
 - MUTE button* [20]
- Channel and Volume Section:**
 - Channel Number buttons* [19] (1-0)
 - EDS button* [21]
 - ENTER button [14]
 - RESET button* [22]
 - CH RTN button* [20]
 - MENU button [14]
 - ▲ / ▼ buttons [14]
 - PIP CH ▲ / ▼ buttons* [28]
- Bottom Section:**
 - ◀ / ▶ buttons [14]
 - FAV ▼ / ▲ buttons* [34]
 - STOP SOURCE
 - PLAY PIP
 - REC TV/VCR REW FF
 - STILL LOCATE SWAP
 - PIP functions* [28]

TOSHIBA

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Before Using the Remote Control

Introductions

With this Remote Control, you can operate your TV and most models of remote-controlled VCR's and Cable TV converters even if they are different brands.

However, this Remote Control must be programmed to control other brands of VCR's and/or Converters. If you will be using your TV set with a TOSHIBA VCR, your remote has already been preprogrammed for you.

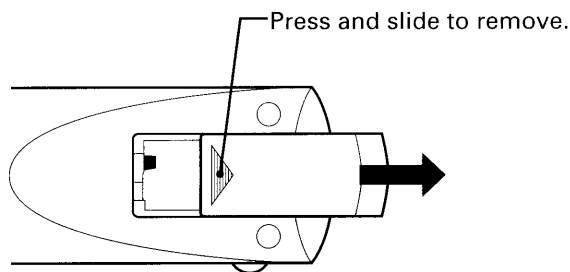
- Before attempting to operate your Remote Control, install the batteries according to the section "Installing and replacing batteries" shown below.
- For more detailed instructions, see the section "Programming the Remote Control" on page 11.

Notes:

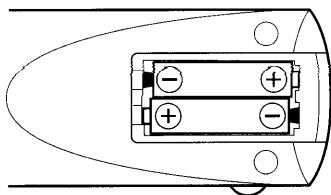
- After installing new batteries, the Remote Control will set itself to the codes for TOSHIBA's TV and VCR. If you are using the Remote Control to operate equipment that uses different codes, it will have to be reprogrammed for those codes.
- This Remote Control may have functions not available on the original remote control.
- These functions may or may not operate your VCR or Cable TV Converter. Refer to the owner's manuals supplied with the equipment to see which functions are available.
- The remote control supplied with your VCR or Cable TV Converter may have keys not duplicated on this Remote Control. If these functions are desired, the original remote will have to be used.

Installing and replacing batteries

- 1 Place the Remote Control with the face down. Press down on the ridged area of the battery cover and slide it off.



- 2 Place two "AAA" size batteries, matching the + and - signs on each battery to the + and - signs of the battery compartment.



- 3 Replace the battery cover until the lock snaps.

CAUTION:

- Do not throw your batteries into a fire. Dispose of your batteries in a designated disposal area.
- Do not combine used old batteries with new ones.
- Do not mix battery types.

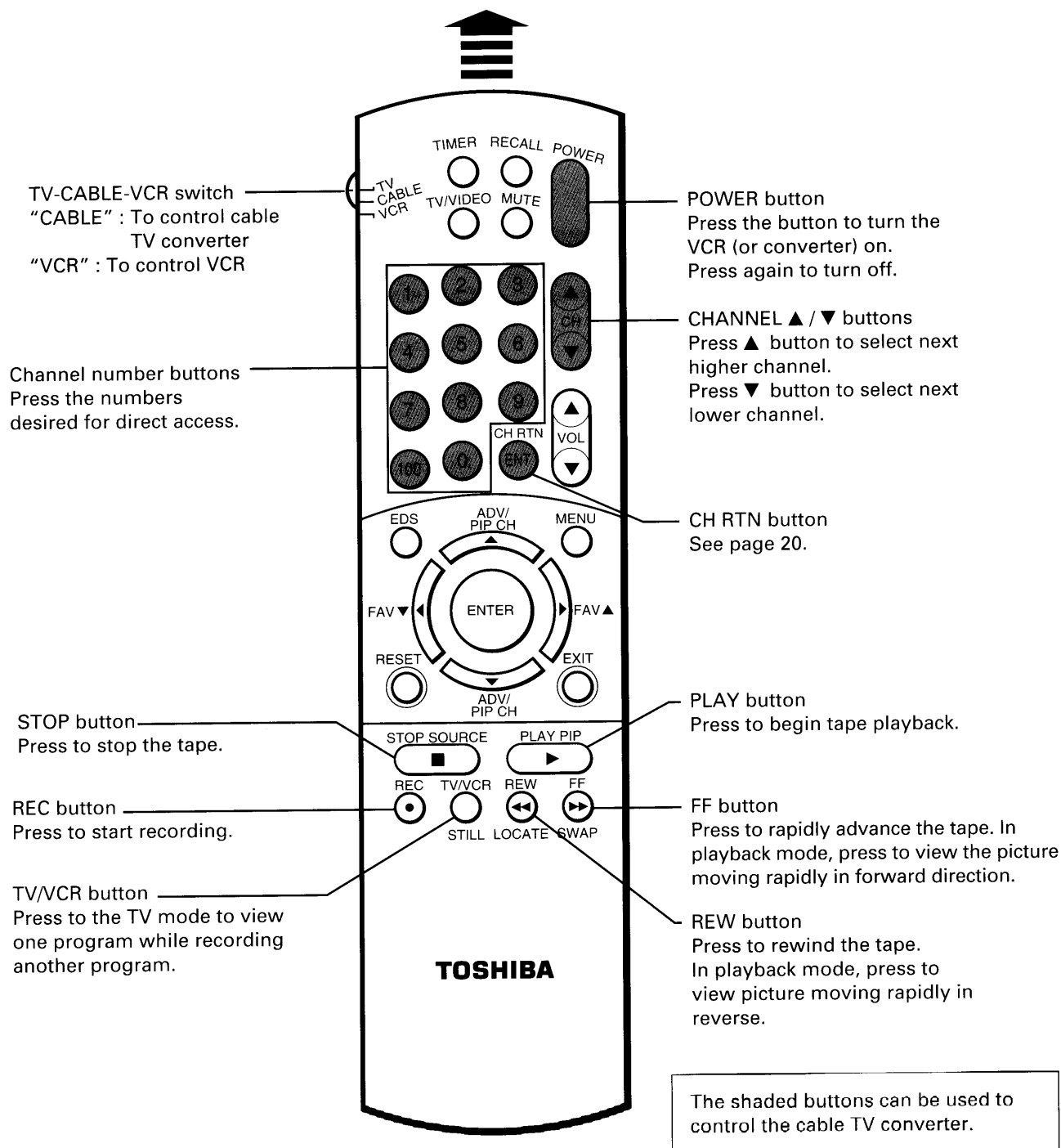
Tips for Best Operation

- For optimum performance, aim the Remote Control directly at the TV from a distance of no more than 16 ft (5m) and be sure there is no obstruction between the Remote Control and the TV.
- If your Remote Control does not always adjust the TV as you wish, you probably need to replace the batteries.
- Remove dead batteries immediately to prevent battery acid from leaking into the battery compartment.
- If you do not intend to use the Remote Control for a long period, remove the batteries.

Using the Remote Control with VCR or Cable TV Converter

- To control a TOSHIBA VCR, first set the TV-CABLE-VCR switch to "VCR" position. The buttons shown below will then control the VCR. The rest of the buttons operate the TV as usual.
If you have another brand of VCR, you can probably program your Remote to control it.
Details are on page 11.
- To control a cable TV converter, this Remote Control must be programmed to recognize the brand of your converter.
See page 11.
Set the TV-CABLE-VCR switch to "CABLE" position whenever you control the cable TV converter.

Aim at the VCR or cable TV converter



Programming the Remote Control

- This Remote Control is preprogrammed to operate TOSHIBA VCR's.
- To use VCR's other than Toshiba models (or Cable converter), perform the following procedures before operating.

Controlling other brands of VCR's and cable TV converters

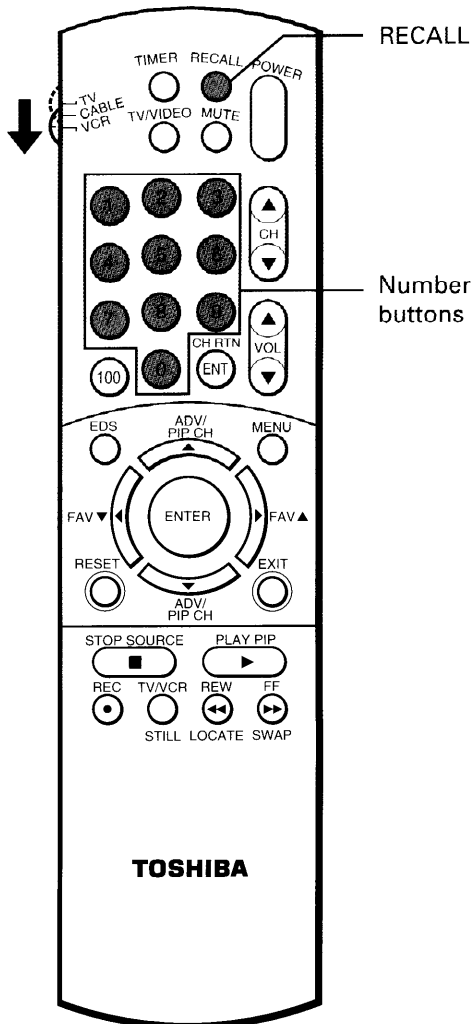
- 1 Refer to the "**VCR code table**" (or "**Cable TV converter code table**") on pages 12 and 13 to find the code number that corresponds to the brand name of your VCR (or your converter).

If more than one number is listed, try each one separately until you find the one that works.

- 2 Set the **TV-CABLE-VCR** switch to "VCR" (or "CABLE").
- 3 Hold down **RECALL** while pressing the **Number** buttons for the three digit code number for your brand of VCR (or converter).
- 4 Point the Remote Control at the VCR (or at the converter) and press **POWER** to test the code number.
 - If the right number was entered, the VCR (or the converter) should turn on.
 - If the VCR (or the converter) does not respond to the Remote Control, repeat steps 1 to 4 with another code number.

Notes:

- You have to reprogram the Remote Control when you change its batteries.
- Some newer VCR's are capable of working on either of two remote codes. These VCR's have a switch labeled "VCR1/VCR2". If your VCR has this kind of switch, and does not respond to all the code numbers for your VCR brand name, set the switch to another position ("VCR1" or "VCR2") and reprogram the Remote Control.



For future reference, write the code you used.

VCR CODE: _____

CABLE CODE: _____

Programming the Remote Control (Continued)

- In some rare cases, you may not be able to operate your non-Toshiba equipment with the supplied Remote Control. This is because your equipment may use a code that is not provided with this Remote Control. In this case, please use the equipment's own remote control.

VCR code table

BRAND NAME	CODE NUMBER		
Adventura	019	ESC	297
Aiko	297	Ferguson	060
Aiwa	019	Fidelity	019
Akai	060,068,080,125, 261	Finlandia	100,123,129
Akiba	091	Finlux	019,061,100,123, 124
Alba	039,228,297,314	Firstline	056,062,064,091, 228
American High	054	Fisher	065,066,073,085, 123
Amstrad	019	Frontech	039
Anam	181	Fuji	052,054
Anitech	091	Funai	019
ASA	056,100	Garrard	019
Asha	259	GE	054,079,084,221
Asuka	056	GEC	100
Audiovox	056	General	071
Baird	019,123	Go Video	251,298
Basic Line	039,091,297	Goldstar	037,056,057
Beaumark	259	Goodmans	019,039,056,081, 091,297
Bell & Howell	123	Gradiente	019
Blaupunkt	053,181	Graetz	060,123
Brandt	206	Granada	065,100,123
Broksonic	140,203,230,380	Grandin	019,056,091
Bush	091,228,297	Grundig	100
Calix	056	Harley Davidson	019
Canon	054	Harman/Kardon	057,094
Capehart	039	Harwood	087,091
Carver	100	Hcm	091
CCE	091,297	Headquarter	065
CGE	019	HI-Q	066
Cimline	091	Hinari	091,227
Citizen	056,297	Hitachi	019,060,061,084, 124,254
Clatronic	039	Hypson	091
Colt	091	Imperial	019
Condor	039	Interfunk	100
Craig	056,066,091,259	ITT	060,065,123,125
Crown	091,297	ITV	056,297
Curtis Mathes	054,079	JCL	054
Cybernex	259	Jensen	060
Daewoo	039,064,065,297	JVC	027,060,086
Dansai	091	Kaisui	091
Daytron	039	Kendo	125,228
De Graff	061	Kenwood	057,060,065,086
Decca	019,100	KLH	091
Dual	060	Kodak	054,056
Dumont	019,100,123,124	Korpel	091
Dynatech	019	Leyco	091
Elcatech	091	Lloyd	019
Electrohome	056	Loewe	056
Electronic	019	Loewe Opta	100
Electrophonic	056	Logik	091,259
Emerex	051	Luxor	062,065,123,125
Emerson	019,021,056,062, 080,087,140,203, 227,228,230,231, 313,314,380	LXI	056
		M-Electronic	019
		Magnavox	019,054,058,100, 129,168
		Magnin	259
		Manesth	064,091
		Marantz	054,057,081,100,
		Marta	056
		Masushita	054
		Matsui	227,228,314
		MEI	054
		Memorex	019,054,056,058, 065,066,067,123, 259
		Memphis	091
		Metz	181
		MGA	062,080
		MGN Technology ..	259
		Minolta	061,124
		Mitsubishi	062,080,086,094, 100,192,233,261,
		Motorola	054,067
		MTC	019,259
		Multitech	019,091
		Murphy	019
		NEC	057,059,060,069, 086
		Neckermann	100
		Nesco	091
		Nikko	056
		Noblex	259
		Nokia	060,065,123,125, 259
		Nordmende	060
		Oceanic	019
		Olympus	054
		Optimus	056,067
		Optonica	067,081
		Orion	140,227,228,314
		Osaki	019,056,091
		Otto Versand	100
		Palladium	056,091
		Panasonic	054,096,115,181, 244
		Penney	054,056,057,059, 061,073,259
		Pentax	061,084,124
		Perdio	019
		Philco	054
		Philips	054,081,100,129
		Phonola	100
		Pilot	056
		Pioneer	086,100
		Portland	039
		Profitronic	259
		Proline	019
		Protec	091
		Pulsar	058
		Pye	100

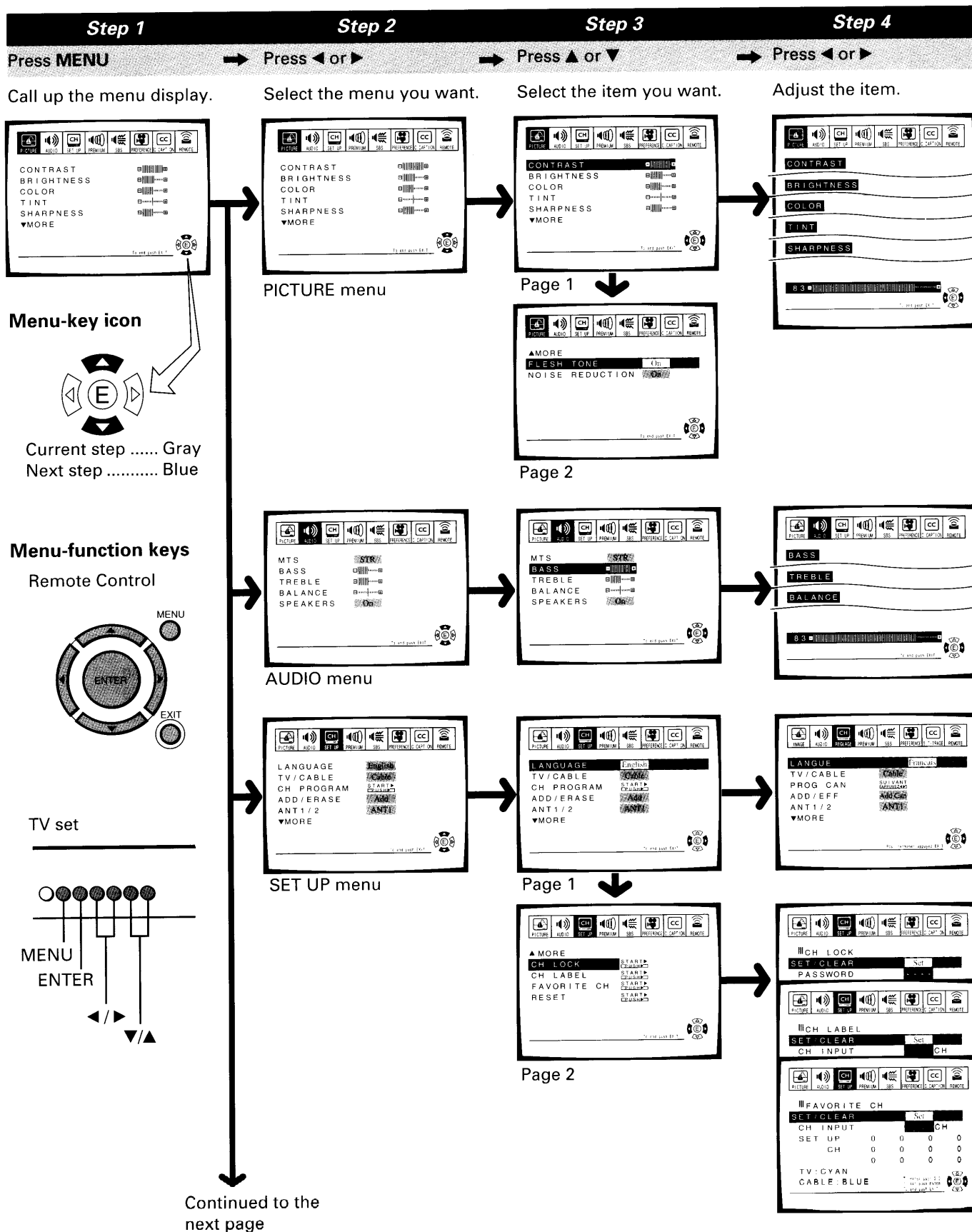
Quarter	065	Teknika	019,054,056,071	Hytex	026
Quartz	065	Teleavia	060	Jasco	172
Quasar	054,096,115	Telefunken	060,206	Jerrold	022,030,031,033, 034,043,045,066, 295
Quelle	100	Tenosal	091	Macom	052
Radio Shack	019,056	Tensai	019	Magnavox	046
Radiola	100	Thomson	060	Memorex	019
Radix	056	Thorn	060,123	Movie Time	175
Randex	056	TMK	227,259	NSC	089,175
RCA	054,061,079,084, 096,115,124,125, 168,221	Toshiba	060,062,064,085, 229,231,385	Oak	026,038,267
RCA Unified	079	Totevision	056,259	Panasonic	040,126
Realistic	019,054,056,065, 066,067,081,085, 123,259	Triumph	227	Paragon	019
Rex	060	Unitech	259	Philips	044,046,047,048, 049,050,079,172
Ricoh	053	Universum	019,056,068,100, 125	Pioneer	042,163
Roadstar	056,091,259,297	Vector	064	Popular	
Runco	058	Vector Research	057,059	Mechanics	419
Saba	060	Victor	027,060,086	Pulsar	019
Saisho	227,228	Video Concepts	059,064,080	PVP Stereo	
Salora	062,065,125	Videosonic	259	Visual Matrix	022
Samsung	064,259	Wards	019,054,061,066, 067,081,091,168, 231,259	RCA	040
Sanky	058,067	XR-1000	019,054,091	Regal	039,278,292
Sansui	060,086	Yamaha	057,060	Regency	021
Sanyo	065,066,123,259	Yamishi	091	Rembrandt	030,089
SBR	100	Yokan	091	Runco	019
Schaub Lorenz	019,060	Yoko	039,259	Samsung	059,163
Schneider	019,091,100,129	Zenith	052,053,058	Scientific Atlanta	025,027,036,296 346
Scott	062,064,140,203, 229,230,231			Signal	034,059
Sears	054,056,061,065, 066,073,085,123, 124			Signature	030
SEG	259			SL Marx	059
SEI	100			Sprucer	040
Seleco	060			Standard	
Sentra	039			Components	174
Sharp	067,081			Starcom	022,034,066
Shintom	091			Stargate	034,059
Shogun	259			Starquest	034
Siemens	056,123			STS	175
Silva	056			Sylvania	020
Singer	091			Teleview	059
Sinudyne	100			Texscan	020
Sontec	056			Tocom	031,032,078
Sony	051,052,053,054			Toshiba	019
STS	061			Tusa	034
Sunstar	019			Unika	041,172
Sylvania	019,054,062,100, 129			United Artists	026
Symphonic	019			United Cable	022
Tandy	019,123			Universal	041,058,075,096 172,210
Tashiko	019			Viewstar	046,079,230
Tatung	019,060,100			Zenith	019
Teac	019,060				
Technics	054,181				

Cable TV converter code table

BRAND NAME	CODE NUMBER
ABC	020,022,026,030, 032,033,036,066
Antronix	041
Archer	041,058,172
Belcor	075
Cable Star	075
Cabletenna	041
Cableview	041
Century	172
Citizen	172
Colour Voice	044,050
Comtronics	059,079
Contec	038
Eastern	021
Garrard	172
GC Electronics	035,075
Gemini	034,089
General	
Instrument	030
Hamlin	028,039,053,278, 292
Hitachi	030

Menu Function (General Instructions)

We suggest you familiarize yourself with the procedure before using the menu function. To adjust any TV feature by using the menu function, follow the flow explained below. You will take four main steps until the adjustments that can be made to the TV appear on the screen.

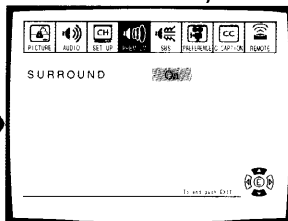




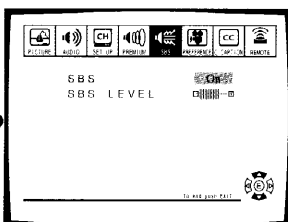
Notes:

- The ENTER button should be used to activate your settings of the functions in the SET UP menu after step 4.
- To return to the first menu shown in step 1, press the MENU button.
- The main menus (step 1 – step 3) will disappear automatically if you do not press a button within 15 seconds and the other displays will also disappear in 6 seconds. If you want to erase the screen of all on-screen displays instantly, press the EXIT button on the Remote Control.
- The ▼/▲ buttons on the TV will function as the CHANNEL ▼/▲ buttons when no menu display is on the screen.
- The ◀/▶ buttons on the TV will function as the VOLUME ▼/▲ buttons when no menu display is on the screen.
- The ◀/▶ buttons on the Remote Control will function as the FAV ▼/▲ buttons when no menu display is on the screen.

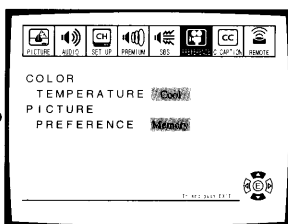
Select the menu you want.



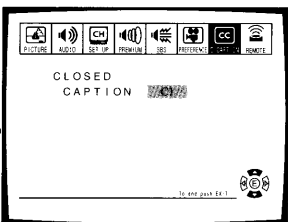
PREMIUM menu



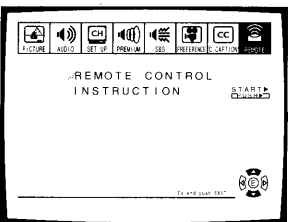
SBS menu



PREFERENCE menu

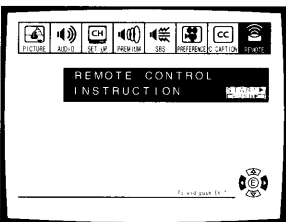
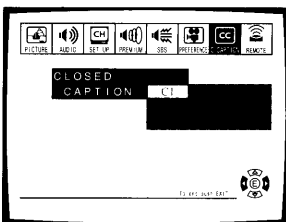
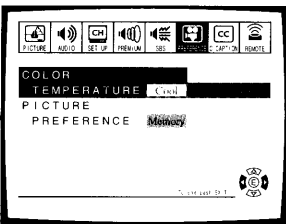
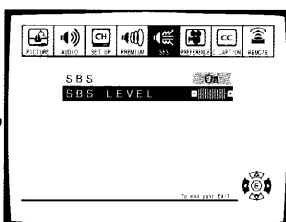
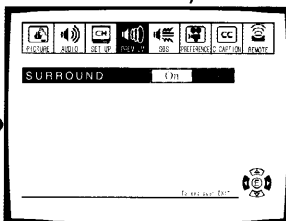


C.CAPTION menu

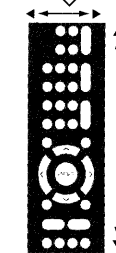
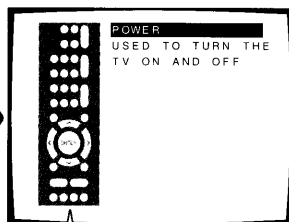
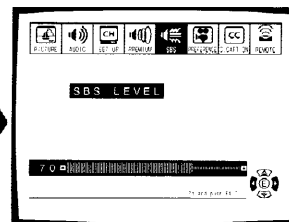


REMOTE menu

Select the item you want.



Adjust the item.



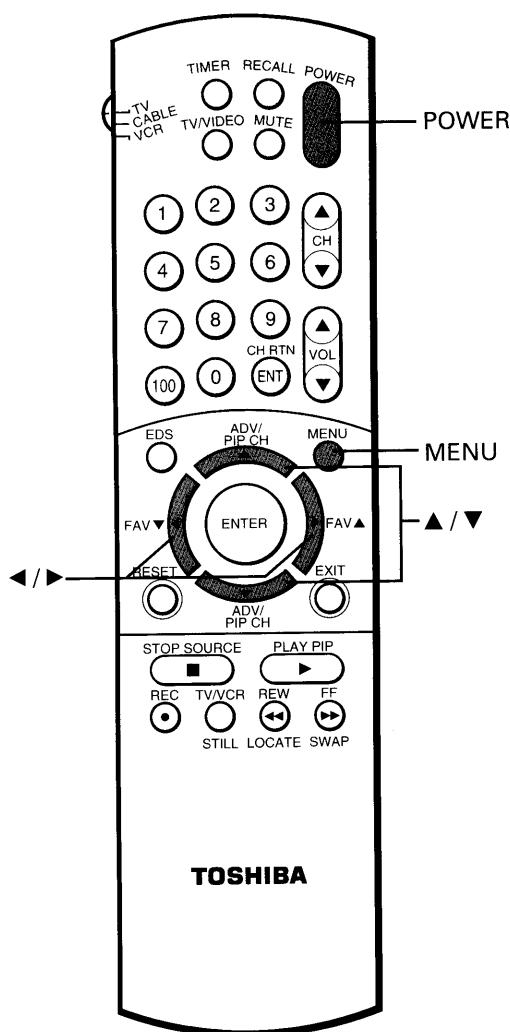
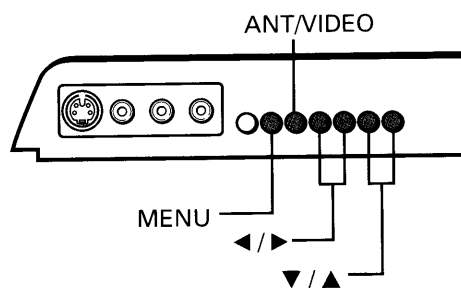
Pressing ◀/▶/▼/▲ buttons on the Remote Control will change the button's explanations on the screen.

PREPARATION

Menu Function (General Instructions)

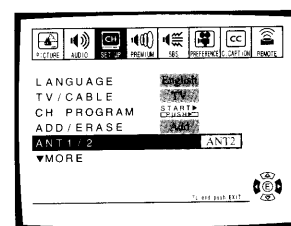
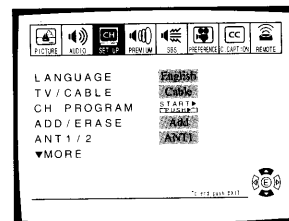
Selecting the Antenna Input

Your TV has two separate antenna inputs (ANT-1 and ANT-2) that allow you to connect two different signal sources, if desired.



Using the SET UP menu (on the Remote)

- 1 Press **POWER** to turn on the TV.
- 2 Press **MENU**, then press **▶** or **◀** until the SET UP menu appears.
- 3 Press **▼** (or **▲**) until "ANT1/2" is highlighted.
- 4 Press **▶** or **◀** to highlight either "ANT1" or "ANT2", which matches the antenna terminal you use.



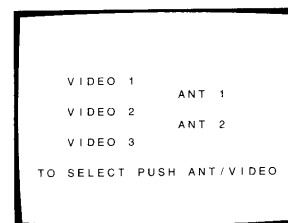
Using the ANT/VIDEO button (on the TV)

Each time you press the **ANT/VIDEO** button, the "ANT 1", "VIDEO 1", "VIDEO 2", "VIDEO 3" or "ANT 2" mode will be selected in order.

The selected mode will be displayed in magenta to show which signal source you are watching.

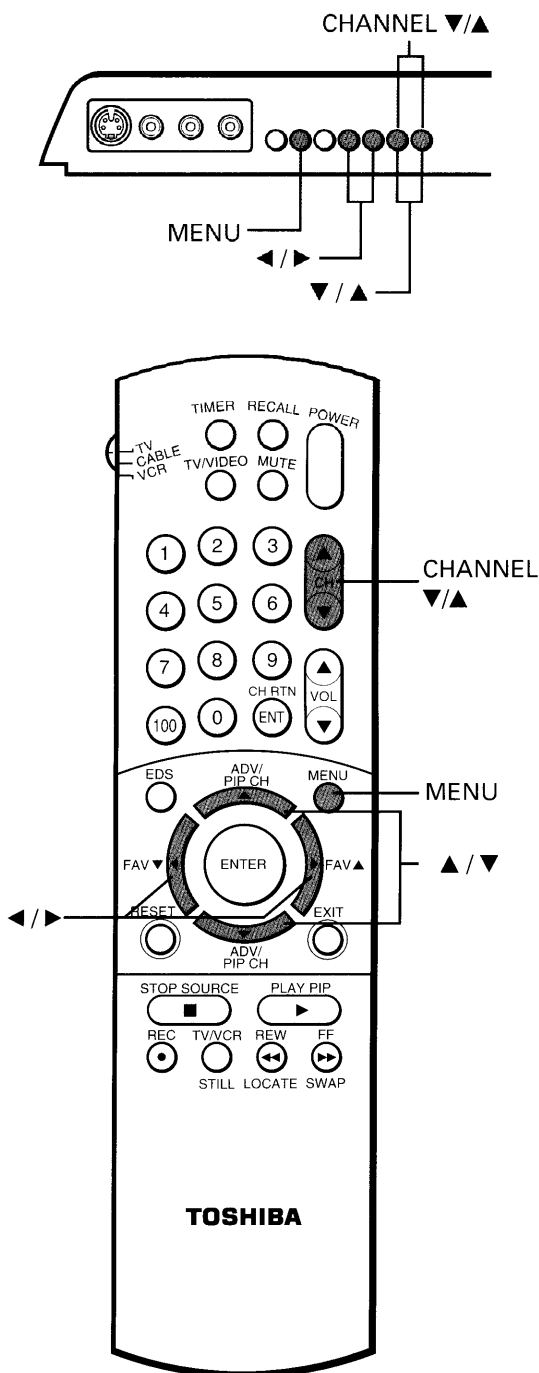
Press the button until "ANT 1" or "ANT 2" is displayed in magenta to match the antenna terminal you use.

Note: This button functions as the **ENTER** button while a menu is on the screen.



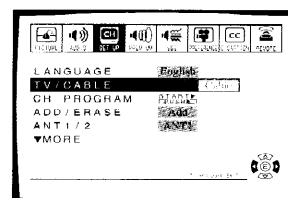
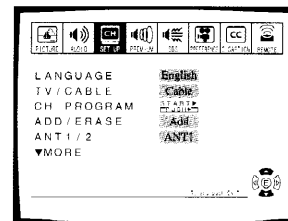
Programming Channel Memory

The channel memory is the list of TV channel numbers your TV will stop on when you press the CHANNEL ▲ or ▼ button. **First, use the TV/CABLE and CH PROGRAM functions to preset all active channels in your area automatically.** If necessary, arrange the preset channels with the ADD/ERASE functions so that you can tune into only desired channels. **Note:** If you utilize both ANT-1 and ANT-2 terminals, perform programming channels for each input source.



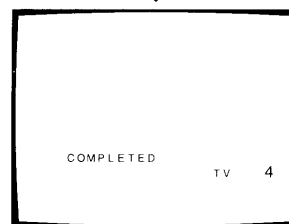
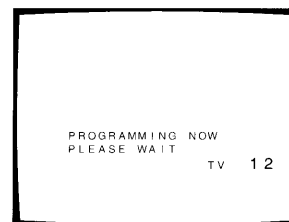
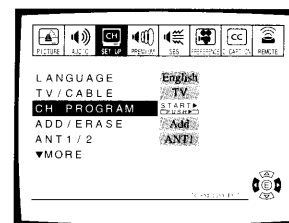
TV/CABLE function

- 1 Press **MENU**, then press ► or ◀ until the SET UP menu appears.
- 2 Press ▼ (or ▲) until "TV/CABLE" is highlighted.
- 3 Press ► or ◀ to highlight either "TV" or "Cable", whichever you use.



CH PROGRAM function

- 1 Select "CH PROGRAM" following steps 1 and 2 above.
- 2 Press ► or ◀ to start channel programming. The TV will automatically cycle through all the TV or CABLE channels selected by the TV/CABLE function, and store active channels in channel memory.
- 3 When channel programming is complete, you will see the message to the right.
- 4 Press **CHANNEL ▲** or ▼ to make sure the channel programming has been done properly.



Note: The CHANNEL ▼/▲ buttons on the TV function as the ▼/▲ buttons while a menu is on the screen.

PREPARATION

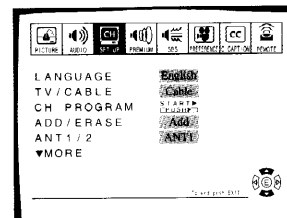
Selecting the Antenna Input/ Programming Channel Memory

Programming Channel Memory (Continued)

ADD/ERASE function

After performing the CH PROGRAM function, you can add or erase specific channels.

- 1 Select the channel you want to erase using the **CHANNEL ▲** or **▼** button, or select the channel you want to add using the **Channel Number** buttons.
- 2 Press **MENU**, then press **▶** or **◀** until the SET UP menu appears.



- 3 Press **▼** (or **▲**) until "ADD/ERASE" is highlighted.

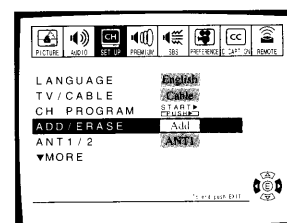
- 4 Press **▶** or **◀**:

To erase the channel

Press the button until "Erase" is highlighted.

To add the channel

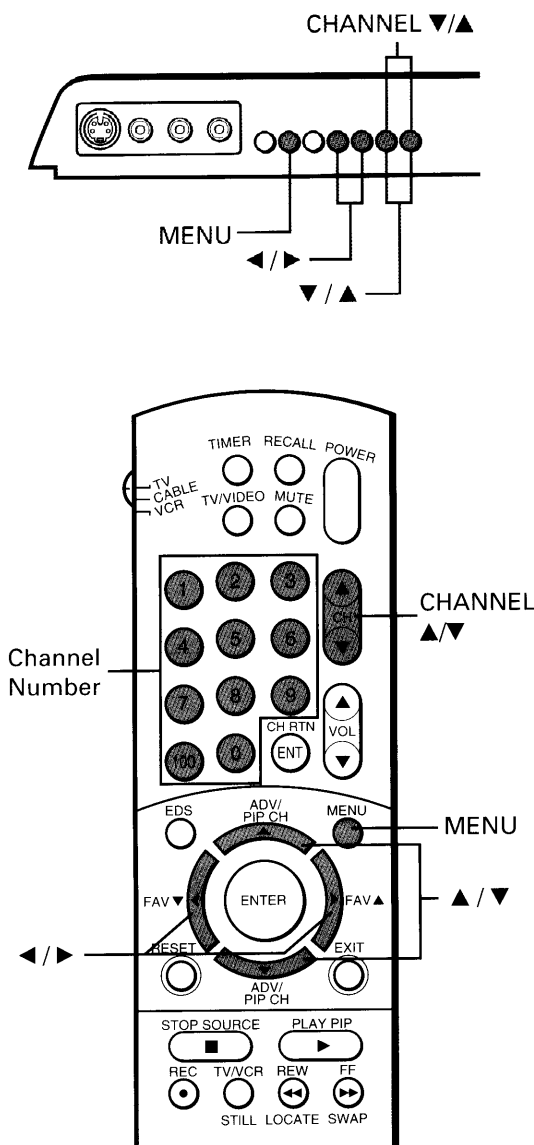
Press the button until "Add" is highlighted.



- 5 Repeat steps 1 to 4 for other channels.

You have now completed the channel programming.

Note: The CHANNEL **▼/▲** buttons on the TV function as the **▼/▲** buttons while a menu is on the screen.



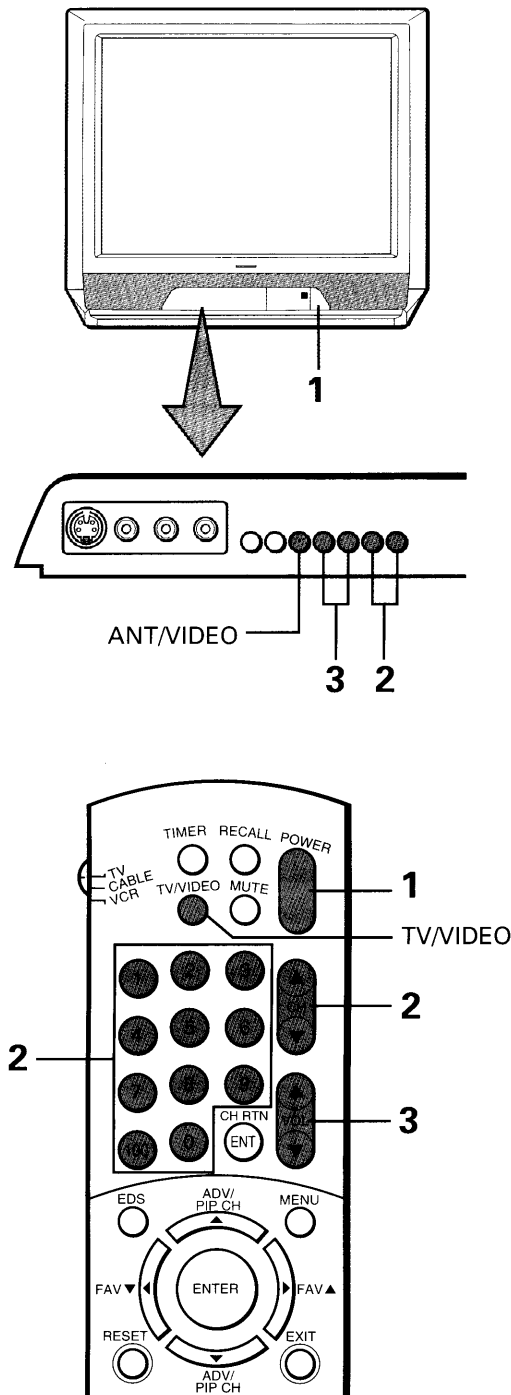
CABLE channel reference chart

Number on this TV	1	5	6	14	15	16	.....	34	35	36	37	38	.....	60	61	62	63	64	65	66
Corresponding CABLE channel	A-8	5(A-7)	6(A-6)	A	B	C	.....	U	V	W	AA	BB	.....	XX	YY	ZZ	AAA	BBB	65	66
Number on this TV	67	68	69	.....	92	93	94	95	96	97	98	99	100	101	102	.....	123	124	125	
Corresponding CABLE channel	67	68	69	.....	92	93	94	A-5	A-4	A-3	A-2	A-1	100	101	102	.....	123	124	125	

The above chart is typical of many cable system channel allocations. If in doubt, consult your cable company.

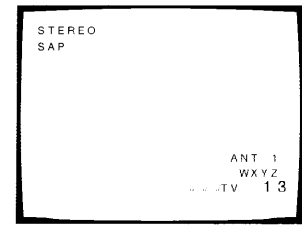
Watching TV Programs

- First set the TV/CABLE/VCR switch on the Remote Control to the "TV" position.



- Press **POWER** to turn on the TV.
The following on-screen information will be displayed for a few seconds.

- Antenna mode (when in the TV mode).
- Channel number or the VIDEO mode selected.
- Channel label (if previously preset).
- Stereo or SAP audio status.



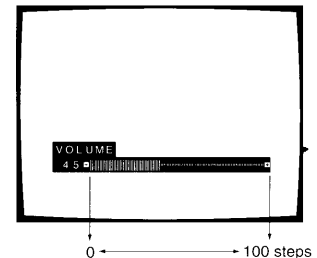
To turn off the TV, press **POWER** again.

- Select a channel in one of the following two ways.
 - To scan the memorized channels in numerical sequence**
Press **CHANNEL ▲** to select the next higher channel.
Press **CHANNEL ▼** to select the next lower channel.
Press the button again to select the next memorized channels.
 - To select a channel directly**
Press the **Channel Number** buttons (0-9 and 100).
To select channel 4, press "4" (or press "0", "4").
To select channel 38, press "3", "8".
To select channel 125, press "100", "2", "5" in sequence.

If you cannot select certain channels, either TV (off the air) or CABLE channels

Check if the TV/CABLE function is properly set. See page 17.

- Press **VOLUME ▼/▲** to adjust the volume.
To increase the volume, press **▲**.
To decrease the volume, press **▼**.



Watching Video Input

The TV/VIDEO button (or ANT/VIDEO button on the TV) is used to view the signals coming from other devices like VCR's or Video Disc Players connected to this TV.

Details are on page 40.

Auto-Power-Off

If a vacant channel is tuned or TV broadcast for a day is finished, the TV will automatically turn off after about 15 minutes.
This feature does not operate in the VIDEO mode.

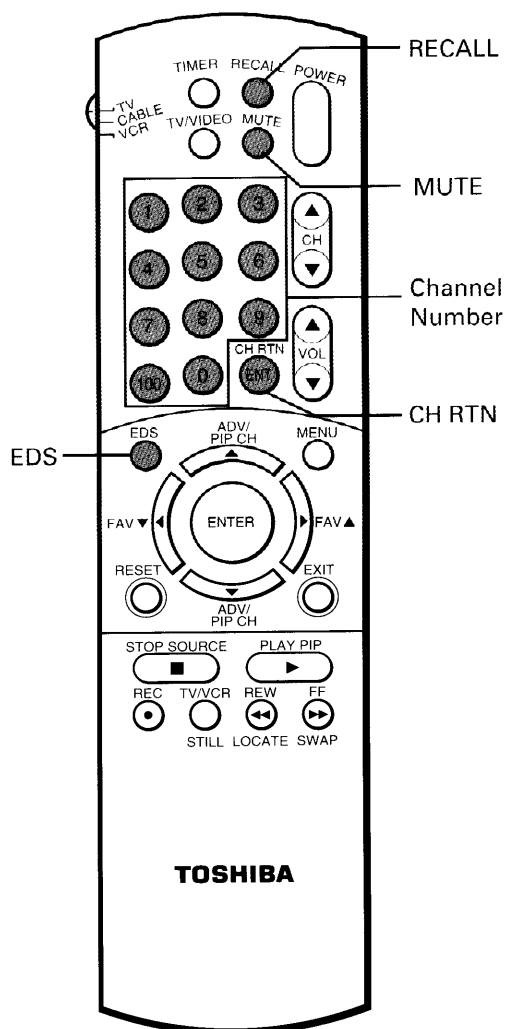
Last Mode Memory

If the power is cut off while you are viewing the TV and the power is resupplied, the TV is turned on automatically by the *Last Mode Memory* feature. If the power is going to be off or when you leave home for a long time, remove the power plug from the wall outlet to prevent the TV from turning on in your absence.

Notes:

- The **VOLUME ▼/▲** buttons on the TV function as the **◀/▶** buttons while a menu is on the screen.
- The **ANT/VIDEO** button on the TV functions as the **ENTER** button while a menu is on the screen.

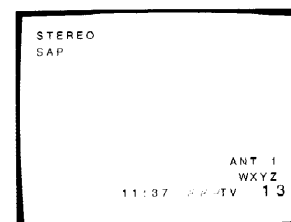
Convenient Remote Functions



Displaying on-screen information

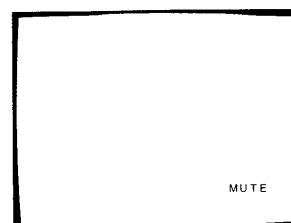
Press **RECALL** to display the following on-screen information.

- Antenna mode (when in TV mode)
- Channel number or VIDEO mode selected
- Channel label (if previously preset)
- Time (if clock has been set)
- Stereo or SAP audio status



Muting the sound

Press **MUTE** to mute the sound. The word "MUTE" will be displayed on the screen as shown. This is useful during telephone calls or other interruptions. To restore the sound, press **MUTE** again.



Note: When the MUTE button is pressed, the Closed-Captioned feature (CAPTION 1) is activated. To deactivate, press the MUTE button again. (This feature only functions when the Closed Caption mode is set to "Off". See page 36.)

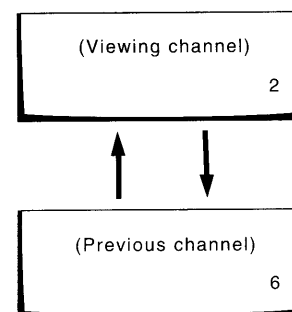
Changing quickly between two channels

Press **CH RTN** to return to the last channel viewed. This is useful should you want to view two channels. This allows you to view two programs without entering an actual channel number each time.

To operate this function

- 1 Select the first channel you want to view.
- 2 Select the other channel with the **Channel Number** buttons.
- 3 Press **CH RTN**.
The previous channel will return.

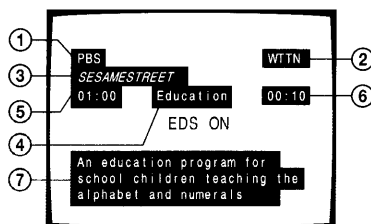
Each time you press **CH RTN**, the TV will switch back and forth between the two channels.



Displaying the EDS information

Press **EDS** to display the following EDS (Extended Data Service) information for about 30 seconds.

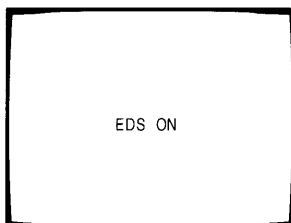
- Network name ①
- Call letters ②
- Program name ③
- Program type ④
- Program length ⑤
- Time elapsed in show ⑥
- Program description ⑦



Some of the above information may not be displayed.

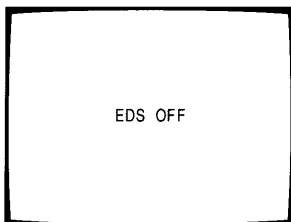
If the TV program you are watching does not include the EDS information

Only "EDS ON" will be displayed for about 4 seconds when you press **EDS**.



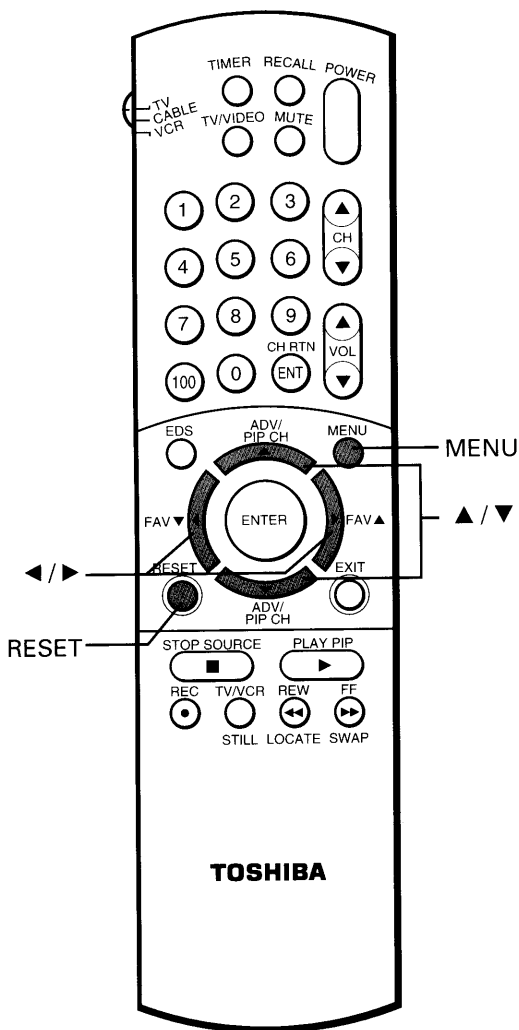
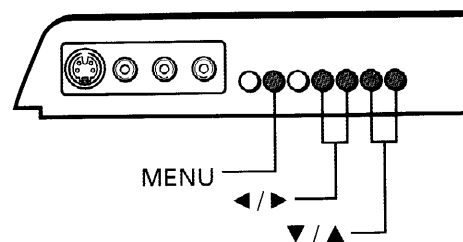
To erase the EDS display

Press **EDS** again.



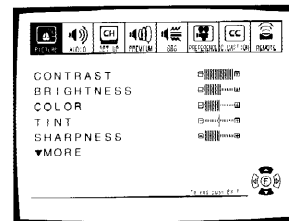
Adjusting the Picture

You can adjust the picture quality (CONTRAST, BRIGHTNESS, COLOR, TINT and SHARPNESS) to suit your taste.



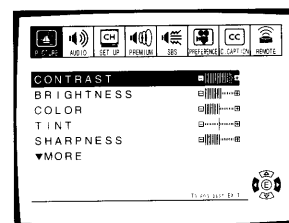
Adjusting the picture quality

- 1 Press **MENU** to display the PICTURE menu on the screen.

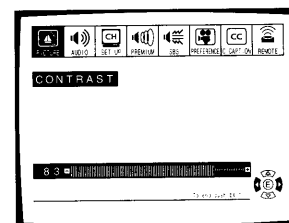


- 2 Press **▼** (or **▲**) until the item you want to adjust is highlighted.

Example: When adjusting "CONTRAST"



- 3 Press **▶** or **◀** to adjust the level.



Selection	Pressing	
	◀	▶
CONTRAST	lower	higher
BRIGHTNESS	darker	lighter
COLOR	paler	deeper
TINT	reddish	greenish
SHARPNESS	softer	sharper

The above five PICTURE items you have adjusted will be stored into "Memory" automatically. To use these settings, see page 23.

To reset the picture adjustments to the factory-preset status
Press **RESET** (or perform the RESET function on page 24).

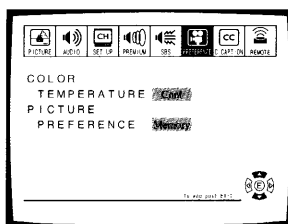
Note: There are two more items in the PICTURE menu — FLESH TONE and NOISE REDUCTION. To use these functions, see page 38.



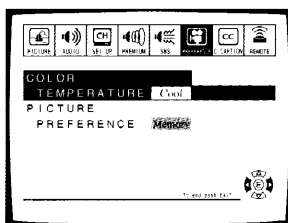
Selecting the color temperature

These selections (Cool, Medium and Warm) change the overall tone of the picture.

- 1 Press **MENU**, then press **►** or **◄** until the PREFERENCE menu appears.



- 2 Press **▼** or **▲** until "COLOR TEMPERATURE" is highlighted.



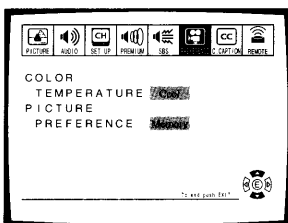
- 3 Press **►** or **◄** to highlight the mode you want.

Mode	Picture quality
Cool	Bluish
Medium	Normal
Warm	Reddish

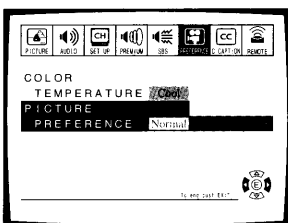
Selecting the picture preference function

You can select a desired picture setup from three picture preset modes (Normal, Theater and Memory) instantly.

- 1 Press **MENU**, then press **►** or **◄** until the PREFERENCE menu appears.



- 2 Press **▲** or **▼** until "PICTURE PREFERENCE" is highlighted.



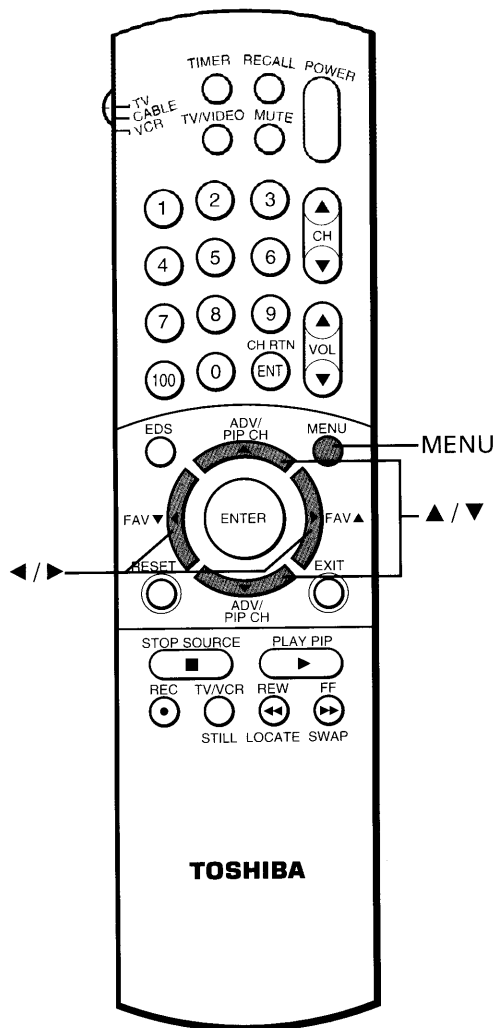
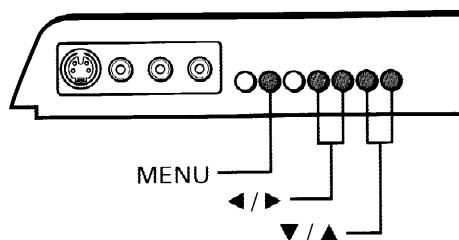
- 3 Press **►** or **◄** to highlight the mode you want.

Mode	Picture quality
Normal	The picture quality preset at the factory
Theater	Soft and moody picture
Memory	The picture quality you set (First follow page 22.)

Note: If the RESET button is pressed, "Normal" mode will be selected.

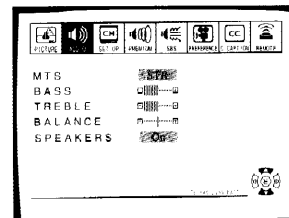
Adjusting the Sound

You can adjust the sound quality (BASS, TREBLE and BALANCE) to suit your taste.



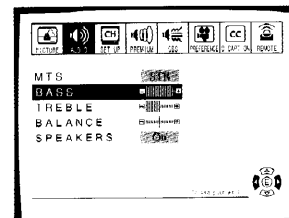
Adjusting the sound quality

1 Press **MENU**, then press **▶** or **◀** until the **AUDIO** menu appears.

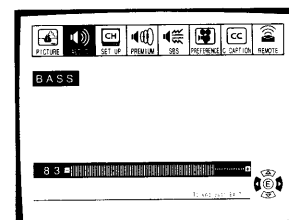


2 Press **▼** (or **▲**) until the item you want to adjust is highlighted.

Example: When adjusting "BASS"



3 Press **▶** or **◀** to adjust the level.



Selection	Pressing	
	◀	▶
BASS	weaker	stronger
TREBLE	weaker	stronger
BALANCE	decreases the right channel	decreases the left channel

To reinforce the bass, see also page 26.

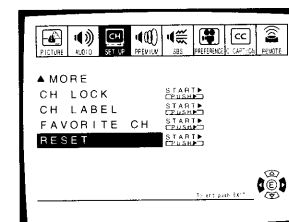
RESET function

To reset the PICTURE and AUDIO adjustments to the factory-preset level (maximum CONTRAST and all the adjustments centered)

1 Press **MENU**, then press **▶** or **◀** until the **SET UP** menu appears.

2 Press **▲** (or **▼**) until "RESET" is highlighted.

3 Press **▶** or **◀**.



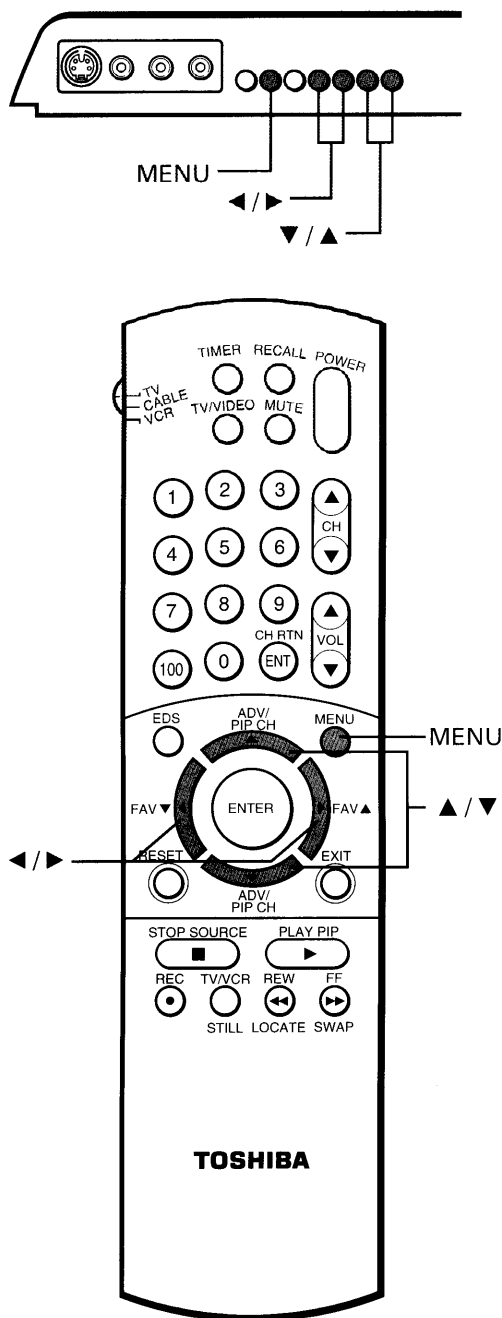
Note: There are some other items in the **AUDIO** menu — **MTS** and **SPEAKERS**. To use these functions, see pages 25 and 45.

The **RESET** function also performs the following adjustments.

- **COLOR TEMPERATURE** Cool
- **PICTURE PREFERENCE** Normal
- **NOISE REDUCTION** Off

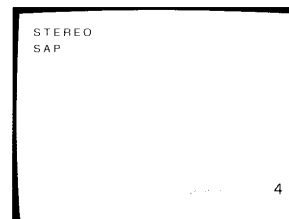
Selecting Stereo/SAP Broadcasts

The MTS (Multi-channel TV Sound) feature allows you to improve your TV viewing with high fidelity stereo sound. MTS also provides for an extra channel, SAP (Second Audio Program), used to transmit a second language or other audio information.

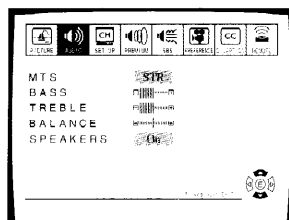


Listening to stereo sound

1 When the TV receives a stereo (or SAP) broadcast, the word "STEREO" (or "SAP") is displayed on the screen whenever the TV is turned on, a channel is selected, or the RECALL button is pressed.

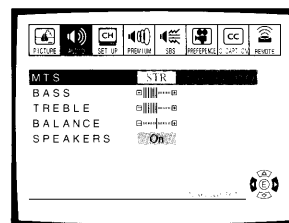


2 Press **MENU**, then press **▶** or **◀** until the AUDIO menu appears.



3 Press **▼** (or **▲**) until "MTS" is highlighted.

4 Press **▶** or **◀** to highlight "STR". If a stereo broadcast is received, "STR" will be displayed in yellow. Normally leave this setting in the stereo mode (STR). Your TV will then automatically reproduce either stereo or monaural sound, whichever is broadcast.



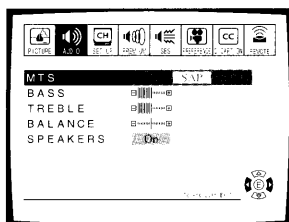
If the stereo sound is noisy

If a broadcast signal is not strong enough, and noise-free stereo sound is not available, select "MONO". The noise should be reduced.

Listening to second language

1 Follow steps 1 to 3 above.

2 Press **▶** or **◀** to highlight "SAP". You will hear only the second language from the left and right speakers.

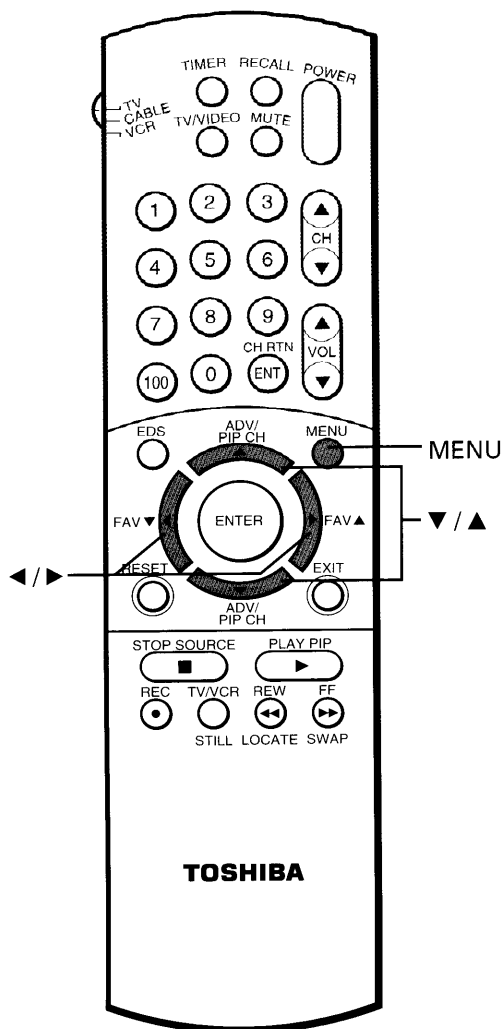


Notes:

- Be sure you have selected "STR" if broadcast is in stereo.
- "MTS" in the AUDIO menu does not function in the VIDEO mode.

Enhancing the Surround Sound Effect

The Surround function expands the audio listening field wider and deeper than you would believe possible from a TV's speakers. This function processes stereo signals from a TV broadcast or VIDEO input. The Sub-Bass System allows you to improve bass-performance (even when the sound volume is low).

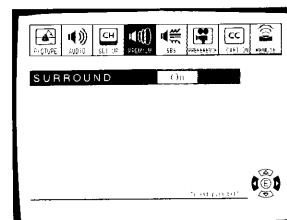
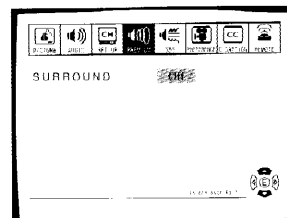


Note on the Surround function
Normally you can leave the MTS function set to "STR" and the Surround function set to "On". The TV will automatically produce either Surround stereo or monaural, depending on the broadcast type.

Note on the Sub-Bass System
The Sub-Bass System does not operate through the "VARIABLE AUDIO OUT" jacks. (See page 45.) However, the above on-screen displays will appear when the buttons are pressed.

Activating the Surround function

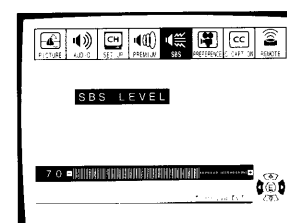
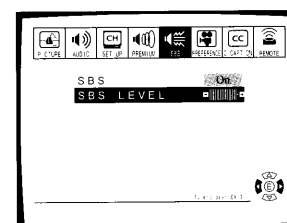
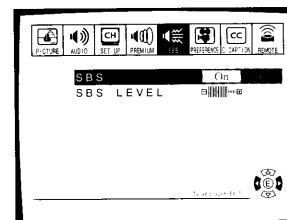
- 1 Select the STR (stereo) mode following the steps on the previous page.
- 2 Press **MENU**, then press **▶** or **◀** until the PREMIUM menu appears.
- 3 Press **▼** or **▲** until "SURROUND" is highlighted.
- 4 Press **▶** or **◀** to highlight "On".



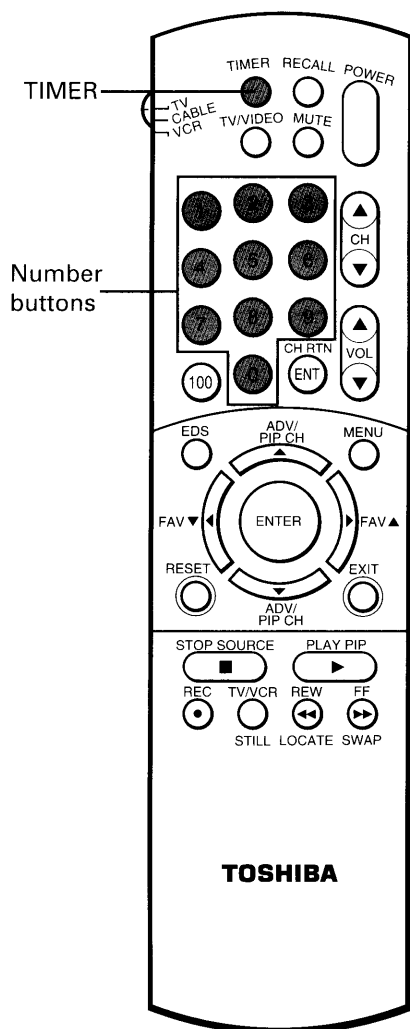
To deactivate the Surround
Select "Off" in step 4 above.

Adjusting the level of the Sub-Bass System (SBS)

- 1 Press **MENU**, then press **▶** or **◀** until the SBS menu appears.
- 2 Press **▼** (or **▲**) until "SBS" is highlighted.
- 3 Press **▶** or **◀** to highlight "On".
- 4 Press **▼** (or **▲**) until "SBS LEVEL" is highlighted.
- 5 Press **▶** or **◀** to adjust the SBS LEVEL.
To increase the level, press **▶**.
To decrease the level, press **◀**.



Setting the Off-Timer / Clock



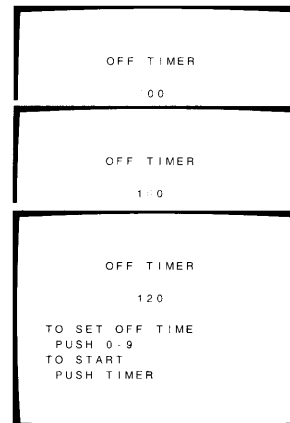
Setting the off-timer (sleep timer)

With the off-timer, you can set the TV to turn off automatically after a pre-determined period of time (up to 180 minutes = 3 hours, in 10-minute intervals).

- 1 Press **TIMER** once to select the **TIMER** mode.
- 2 Press two **Number** buttons to enter the length of time you want the TV to stay on after each number position starts to blink.

Example: 120 minutes
Press 1 and 2.

- 3 Press **TIMER** to start the timer.
The display color will change from magenta to cyan, and then the display will go off.



To cancel the setting

Press **POWER** twice, once to turn the TV off and once to turn it on again.

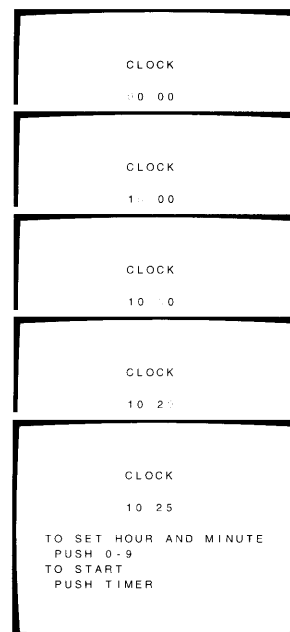
Setting the clock

- 1 Press **TIMER** twice to select the **CLOCK** mode.
- 2 Press four **Number** buttons to enter the correct time, after each number position starts to blink.

Example: To set 10:25 p.m.
Press 1, 0, 2 and 5.

- The clock operates on a 12-hour cycle.

- 3 Press **TIMER** to start the clock.
The display color will change from magenta to cyan, and then the display will go off.



Note on the off-timer:

To display the time remaining until the shut-off time, press **TIMER** once. The remaining time will be displayed on the screen. To erase the display, press **TIMER** twice.

Note on the clock:

- If the power source for the TV is interrupted (i.e., AC cord unplugged or power failure), the clock will have to be reset. (The time display will show "00:00".)

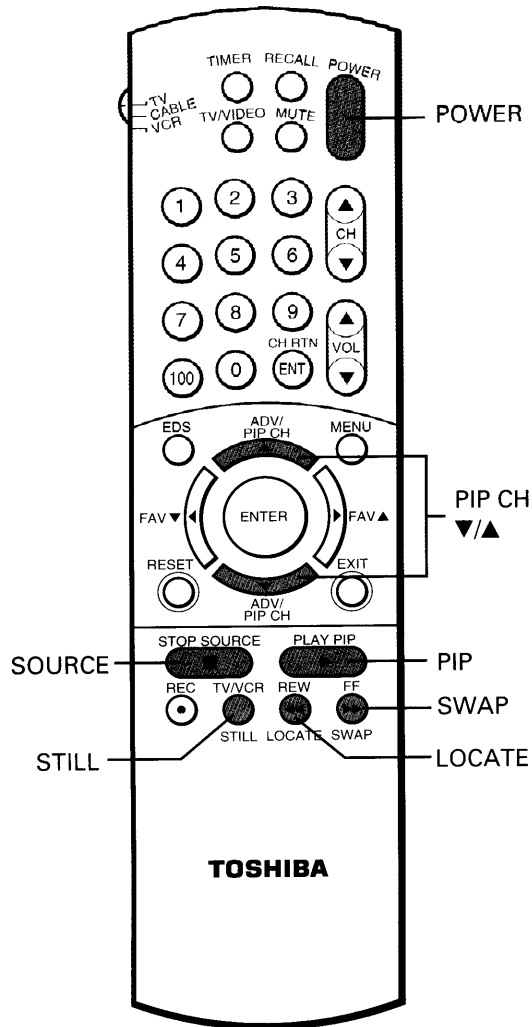
To monitor the time

Press **RECALL**.

Watching Picture-in-Picture

This TV is capable of displaying two pictures simultaneously. This is called the Picture-in-Picture function. A TV broadcast picture, or a picture from external source equipment such as a VCR, can be displayed as a small picture.

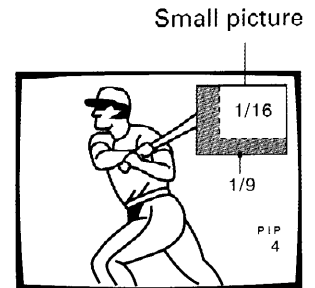
Note: The signal sources from the ANT-2 terminal cannot be displayed as a small picture.



Displaying a small picture

To display a TV broadcast picture as a small picture

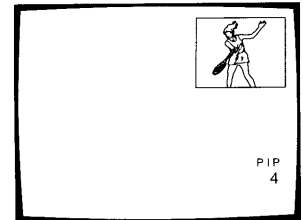
- 1 Press **POWER** to turn on the TV and select the desired program.
- 2 Press **PIP** **once** to display a small picture. The 1/9 size window picture will appear. If you press the button **twice**: The 1/16 size window picture will appear.
- 3 Press **PIP CH** **▼/▲** to select the desired program for the small picture.
- 4 To turn off the small picture, press **PIP** again.



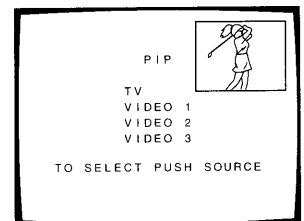
To display a picture from an external source as a small picture

Connect external source equipment for the small picture. (For connection, see pages 41 to 43.)

- 1 Press **POWER** to turn on the TV and select the desired program.
- 2 Press **PIP** to display a small picture.



- 3 Press **SOURCE** repeatedly to select the input source (TV, VIDEO 1, VIDEO 2 or VIDEO 3) for the small picture. The selected source will be displayed in magenta.



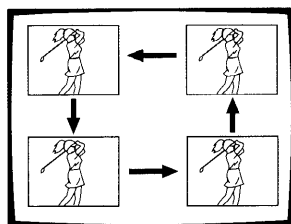
To turn off the small picture, press **PIP**

- **Twice**, if you watch the 1/9 size window picture.
- **Once**, if you watch the 1/16 size window picture.

Using advanced functions

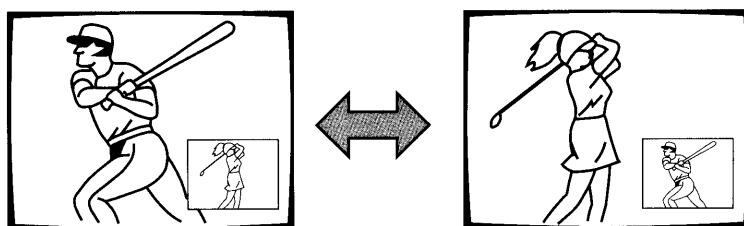
To change the position of the small picture

Press **LOCATE** repeatedly when a small picture is displayed. The display position of the small picture will change in order.



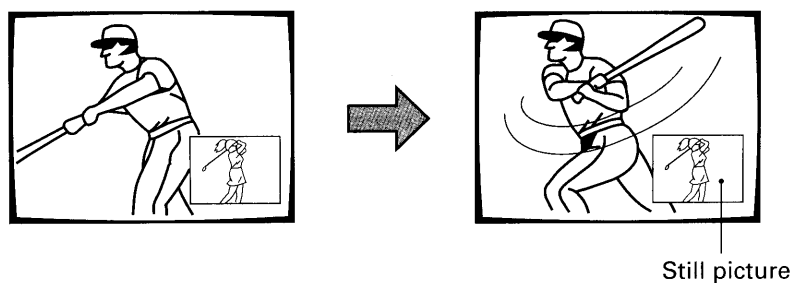
To switch the main and small picture

Press **SWAP** when a small picture is displayed. The main and small pictures will switch. To switch them again, press **SWAP** again.



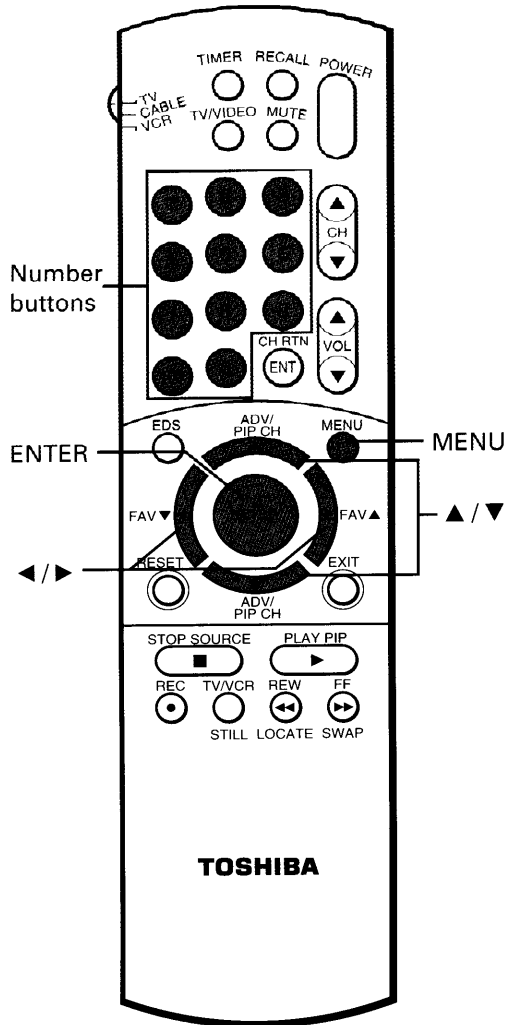
To freeze the small picture

Press **STILL** when a small picture is displayed. The small picture will become a still picture. To return to a moving picture, press **STILL** again.



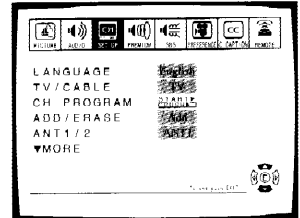
Locking Channels

With this function you can lock out specific channels by entering your own 4-digit password. The TV will not be able to tune them for the next 24 hours, unless you unlock channels. This TV has 8 memory spaces total, 4 each for the TV and CABLE mode.

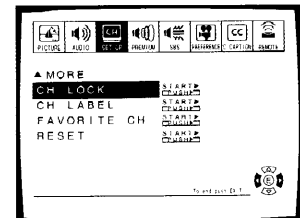


Locking out channels

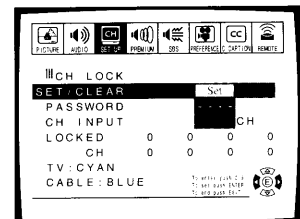
1 Press **MENU**, then press **▶** or **◀** until the **SET UP** menu appears.



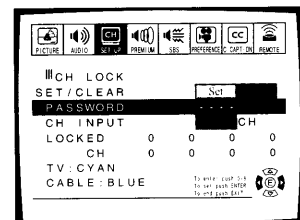
2 Press **▲** (or **▼**) until **"CH LOCK"** is highlighted.



3 Press **▶** or **◀** to display the **CH LOCK** menu. **"SET/CLEAR"** will be highlighted.



4 Press **▶** or **◀** to highlight **"Set"**.



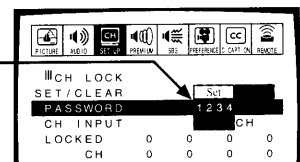
5 Press **▼** to highlight **"PASSWORD"**.

6 Press **Number** buttons (0 - 9) to enter a 4-digit password. The numbers you enter will replace the dashes in the display. **Pick a number that is easy to remember.**

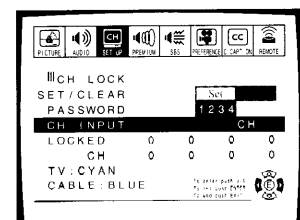
Example: To enter "1234"

Press 1, 2, 3, and 4 in order.

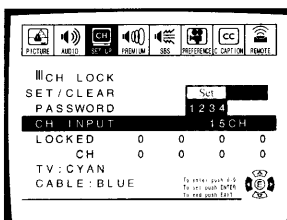
1 - - - → 1 2 - - → 1 2 3 - → 1 2 3 4



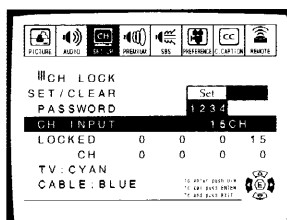
7 Press **▼** to highlight **"CH INPUT"**.



- 8 Press **Number** buttons (0 - 9, and 100) to enter a channel number.



- 9 Press **ENTER**.

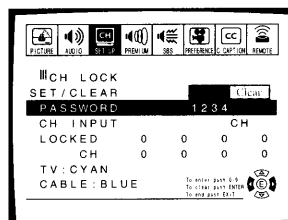
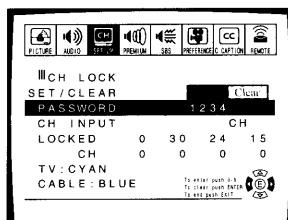
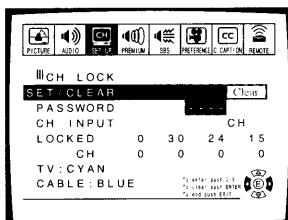


- 10 Repeat steps 8 and 9 for other channels.

Note: If a different code number is used whenever you lock out a channel, the last one has priority over the preceding ones.

Unlocking channels

- Follow steps 1 to 3 on the previous page.
- Press **►** or **◀** to highlight "Clear".
- Press **▼** to highlight "PASSWORD".
- Press the **Number** buttons (0 - 9) to enter the 4-digit password used to lock out the channels.
- Press **ENTER**.



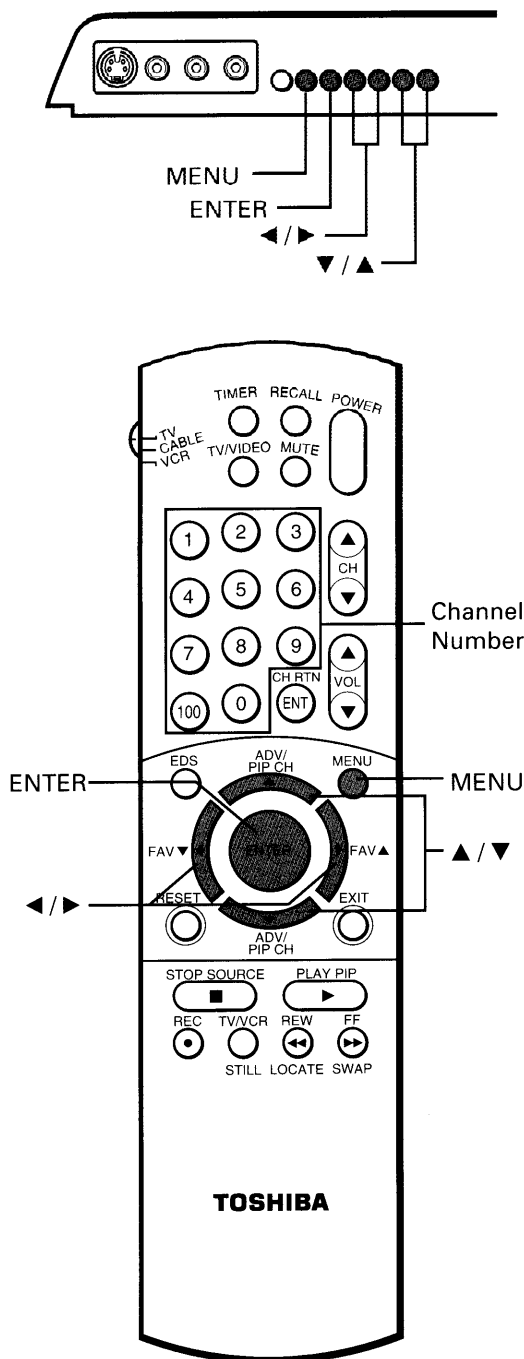
If a wrong password has been entered
The message to the right appears. Try to enter the correct code again.

WRONG PASSWORD
ENTER CORRECT ONE

If you want to know the channels you have locked out
Call up the CH LOCK menu.

Labeling Channels

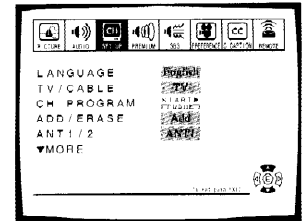
This feature allows you to enter a 4 letter channel identifier of your choice that will appear over the channel number display. The labeling can be anything you want (for example the station call letters).



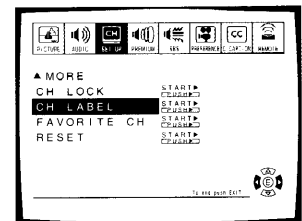
Programming the channel labels

Example: To assign "ABCD" to channel 4.

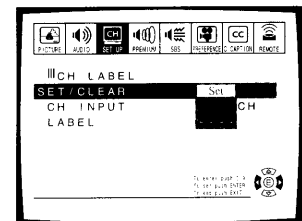
1 Press **MENU**, then press **▶** or **◀** until the **SET UP** menu appears.



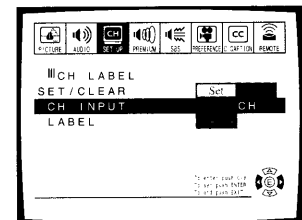
2 Press **▲** (or **▼**) to highlight "**CH LABEL**".



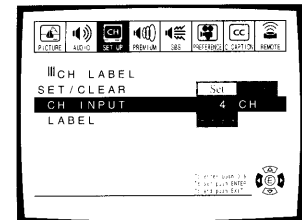
3 Press **▶** or **◀** to display the **CH LABEL** menu. "**SET/CLEAR**" will be highlighted.



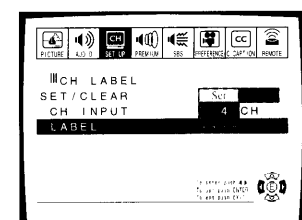
4 Press **▶** or **◀** to highlight "**Set**".



5 Press **▼** to highlight "**CH INPUT**".

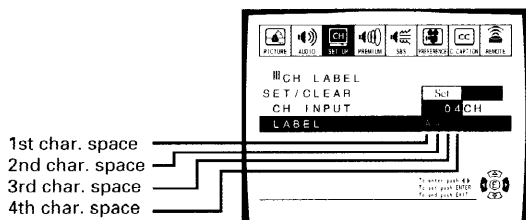


6 Now select a channel you want to label. In this example, press **4** to select Channel 4.

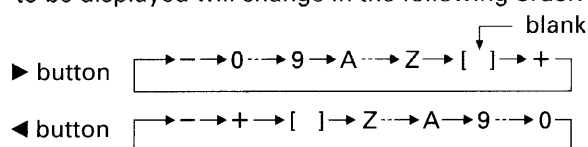


7 Press **▼** to highlight "**LABEL**".

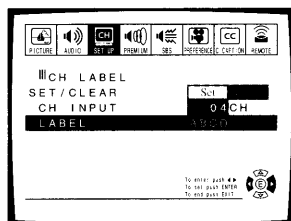
- 8** Now assign the label (in this example, "ABCD") to the channel.
Press ► or ◀ to put a character "A" in the 1st character space.
Press the button until the character you want appears on the screen.



Letters of alphabet, numbers and other graphic symbols are available for labeling.
Each time you press the ► or ◀ button, the character to be displayed will change in the following order.



- 9** Press **ENTER**.
10 Repeat steps 8 and 9 to enter the 2nd, 3rd and 4th characters "B", "C", "D".

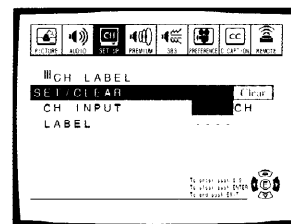


- 11** Repeat steps 6 to 10 for other channels.
You will be able to assign up to 32 labels.

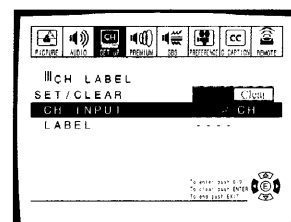
The label will appear when you turn the TV on, select a channel, or press the RECALL button.

Erasing channel labels

- 1** Follow steps 1 to 3 on the previous page.
2 Press ► or ◀ to highlight "Clear".

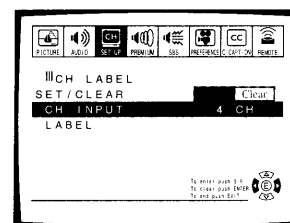


- 3** Press ▼ to highlight "CH INPUT".

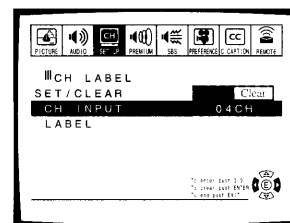


- 4** Select the channel having the label you want to erase.

Example: To erase the label of channel 4.



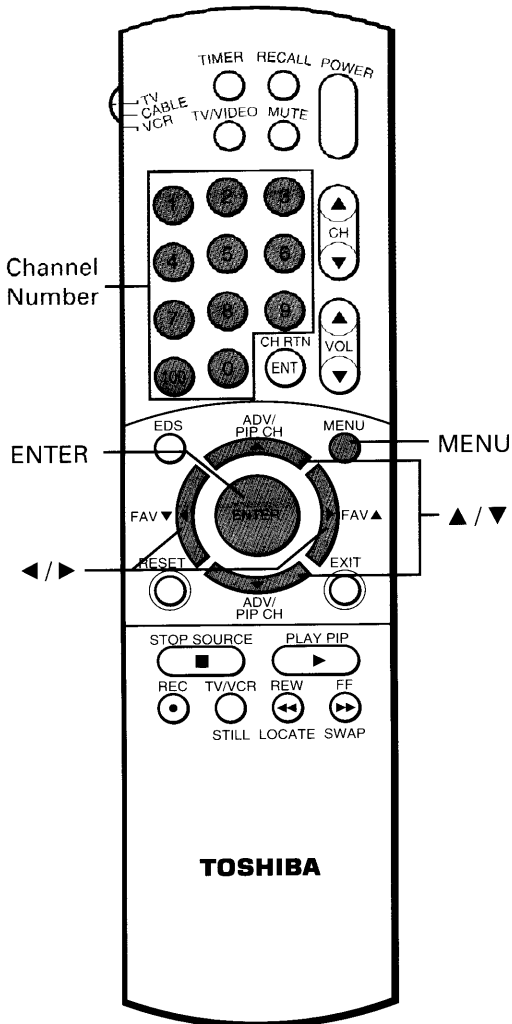
- 5** Press **ENTER**.



- 6** Repeat steps 4 and 5 for other channel.

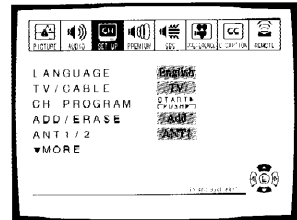
Programming Your Favorite Channels

The Favorite Channel Programming feature allows you to program up to 12 of your favorite channels. Once programmed, you can use the FAV ▼/▲ buttons on the Remote Control to scan through only your favorite channels, skipping other channels you do not normally view. You can use the CHANNEL ▲/▼ buttons to scan through all the channels you programmed in the TV's memory.

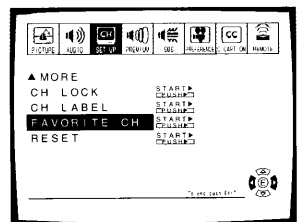


Programming your favorite channels

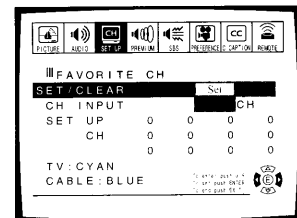
1 Press **MENU**, then press ► or ◀ until the **SET UP** menu appears.



2 Press ▲ (or ▼) until **"FAVORITE CH"** is highlighted.

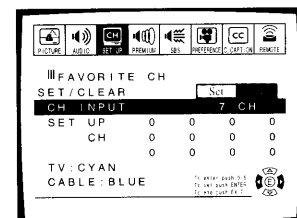


3 Press ► or ◀ to display the **FAVORITE CH** menu. **"SET/CLEAR"** will be highlighted.

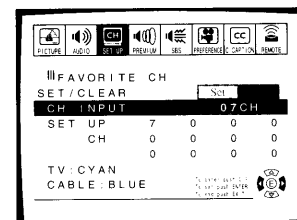


4 Press ► or ◀ to highlight **"Set"**.

5 Press ▼ to highlight **"CH INPUT"**.



6 Press **Channel Number** buttons (0 - 9, and 100) to enter a channel number.



7 Press **ENTER**.

8 Repeat steps 6 and 7 for other channels.

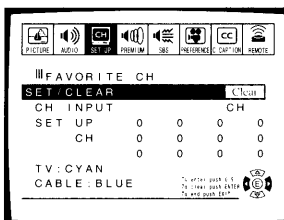
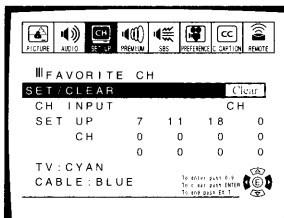
Selecting your favorite channels

To select your favorite channels you have programmed, use the **FAV** ▼/▲ buttons on the Remote Control instead of using the CHANNEL ▲ / ▼ buttons.

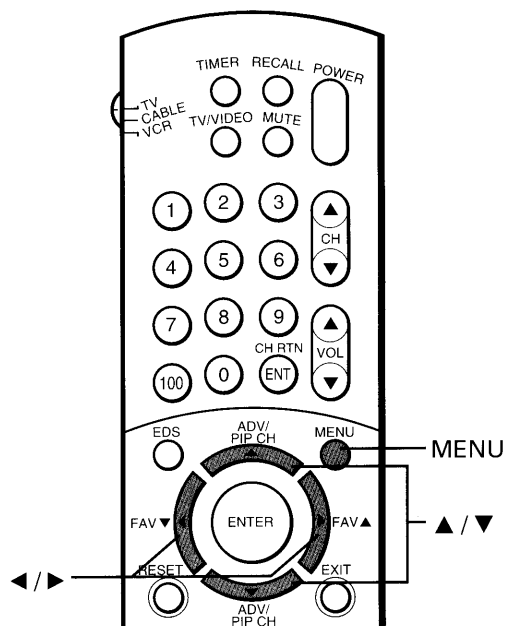
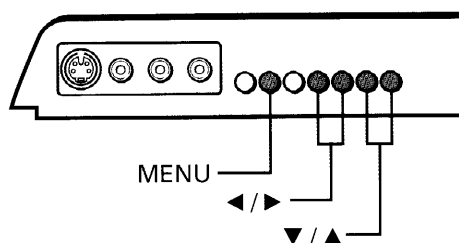
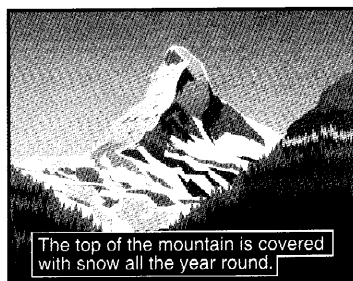
Note: The FAV ▼/▲ buttons cannot function if you have not programmed your favorite channels.

Clearing your favorite channels

- 1 Follow steps 1 to 3 on the previous page.
- 2 Press ► or ◀ to highlight "Clear".
- 3 Press **ENTER**.



Using Closed-Captioned Function



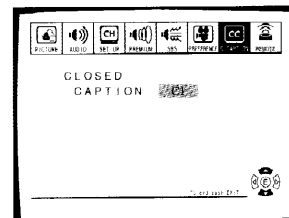
Viewing captions

Closed-captioning is a printed version of the dialogue, narration, and/or sound effects of a TV program.

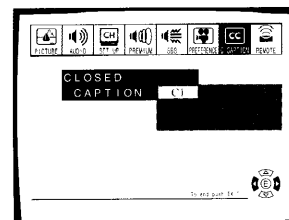
Captions will appear at either the top or bottom of the screen during captioned broadcasts as shown.

Captioning is especially helpful for hearing impaired individuals.

- 1 Select the desired program.
- 2 Press **MENU**, then press **▶** or **◀** until the **CLOSED CAPTION** menu appears.



- 3 Press **▼** or **▲** to highlight "CLOSED CAPTION".



- 4 Press **▶** or **◀** to select the caption you want— C 1 (Caption 1), C 2 (Caption 2), C 3 (Caption 3), or C 4 (Caption 3). Select "C 1 " for translation of the primary language in your area. Select "C 3 " for captioning information usually of secondary languages. "C 2 " or "C 4 " carries Closed Captioning but not necessarily in the same time frame as the sound from the program.

To deactivate this feature
Select "Off" in step 4 above.

Note:

A closed-captioned signal may not be decoded in the following situations.

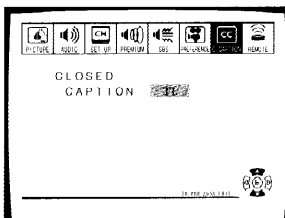
- When a video tape has been dubbed.
- When the signal reception is weak.
- When the signal reception is non-standard.

Viewing text

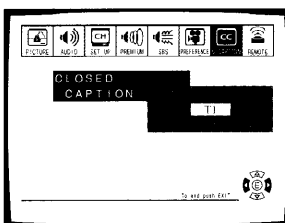
Text is information that is presented using the full television screen. It is usually not related to the program.

For example, it could be a listing of the closed-captioned programs, news, weather information or stock market reports.

- 1 Select the desired program.
- 2 Press **MENU**, then press **►** or **◄** until the CLOSED CAPTION menu appears.



- 3 Press **▼** or **▲** to highlight "CLOSED CAPTION".



- 4 Press **►** or **◄** to select the text you want — T 1 (Text 1), T 2 (Text 2), T 3 (Text 3), or T 4 (Text 4).

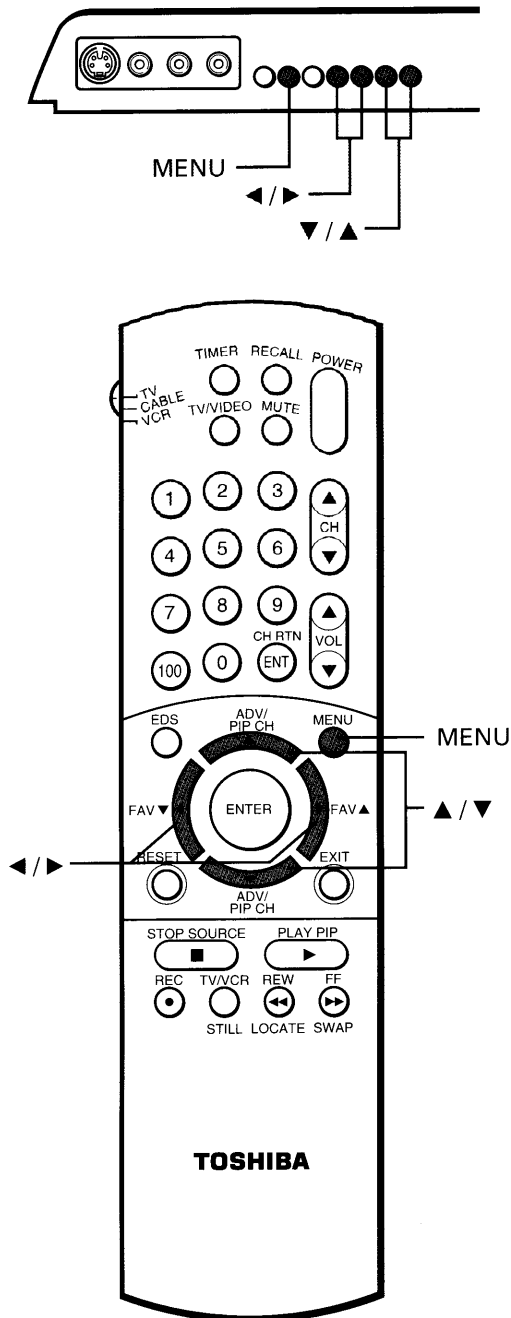
WORLD WEATHER			
	Temps		Current Weather
	F	C	
LONDON	51	11	Clear
MOSCOW	57	14	Cloudy
PARIS	53	12	Clear
ROME	66	19	Cloudy
TOKYO	65	18	Rain

To deactivate this feature

Select "Off" in step 4 above.

Note: If you select a closed-captioned channel and the text mode, the text screen always appears. However, text characters are not displayed when no signal is aired.

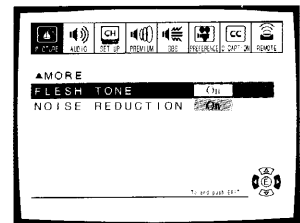
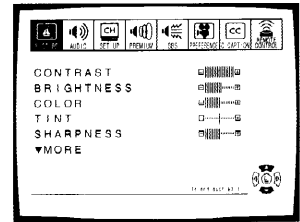
Activating Flesh Tone / Noise Reduction Functions



Activating flesh tone function

This function allows you to obtain natural flesh tone by correcting the reference of tint between TV stations.

- 1 Press **MENU**, then press **▶** or **◀** to display the PICTURE menu on the screen.
- 2 Press **▲** (or **▼**) until "FLESH TONE" is highlighted.
- 3 Press **▶** or **◀** to highlight "On".



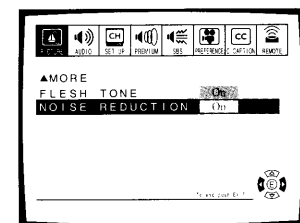
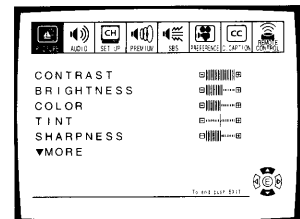
To deactivate this function

Select "Off" in step 3 above.

Reducing picture noise

This function allows you to reduce visible interference in your TV picture. This is useful when receiving a broadcast with a weak signal or playing back a video tape or disc damaged by repeated use.

- 1 Press **MENU**, then press **▶** or **◀** to display the PICTURE menu on the screen.
- 2 Press **▲** (or **▼**) until "NOISE REDUCTION" is highlighted.
- 3 Press **▶** or **◀** to highlight "On".

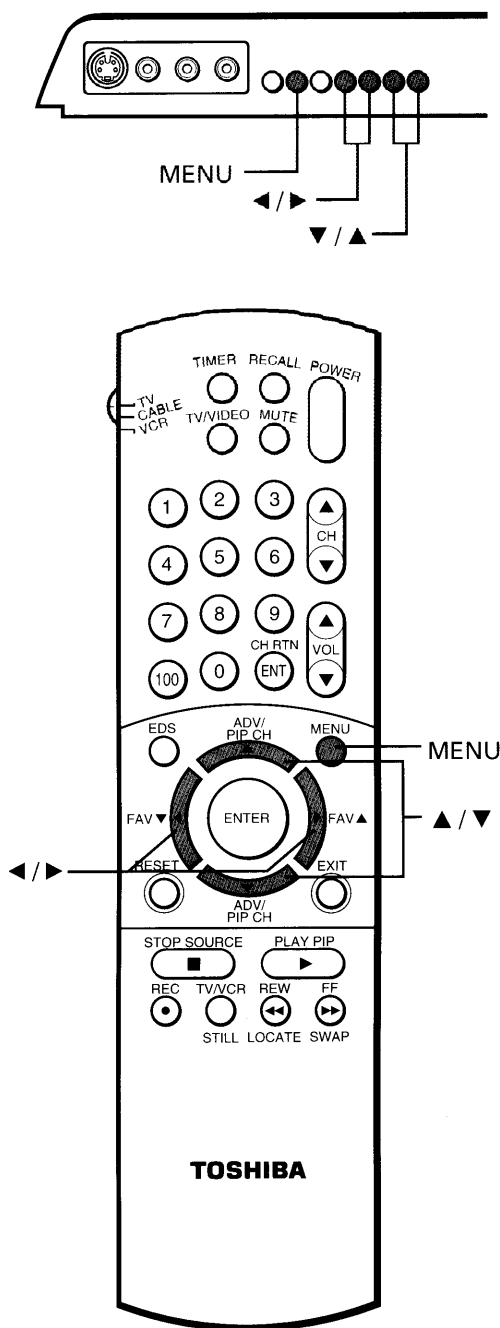


To deactivate this function

Select "Off" in step 3 above.

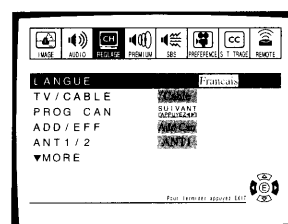
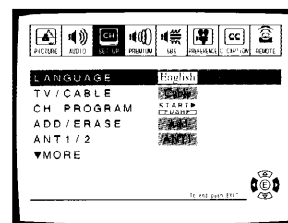
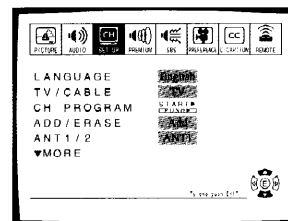
Changing On-Screen Display Language

Three different languages (English, French and Spanish) are available for the on-screen displays (adjustment menus, and messages), and you can choose the desired one.

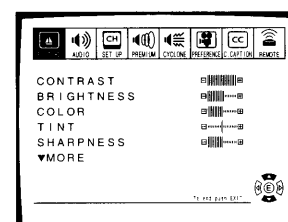


Selecting a language

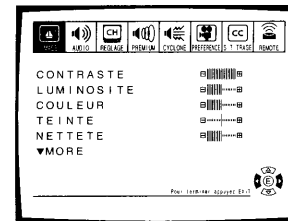
- 1 Press **MENU**, then press **▶** or **◀** button until the SET UP menu appears.
- 2 Press **▼** (or **▲**) to highlight "LANGUAGE".
- 3 Press **▶** or **◀** until the desired language is highlighted.



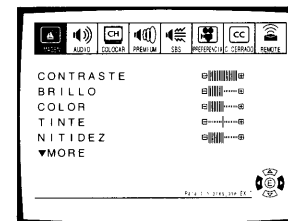
Example: PICTURE menu display "English"



"French"



"Spanish"

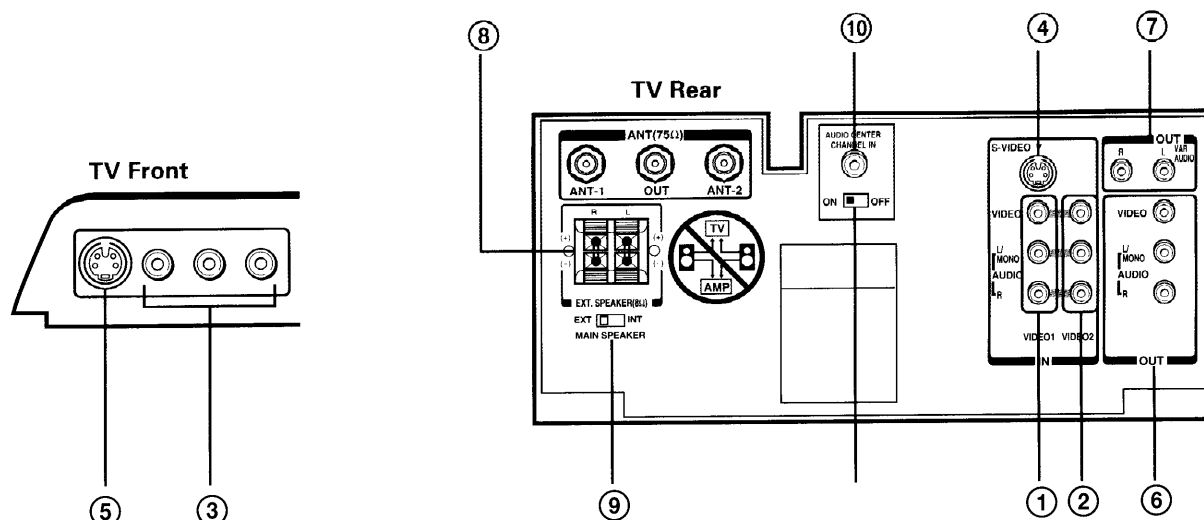


Activating Flesh Tone/Noise Reduction Functions/
Changing On-Screen Display Language

ADVANCED
OPERATION

Monitor Panel

This TV set is equipped with S-VIDEO IN jacks, VIDEO/AUDIO IN jacks, VIDEO/AUDIO OUT jacks, VARIABLE AUDIO OUT jacks, AUDIO CENTER CHANNEL IN jacks and EXTERNAL SPEAKER terminals for connecting your desired video/audio equipment.

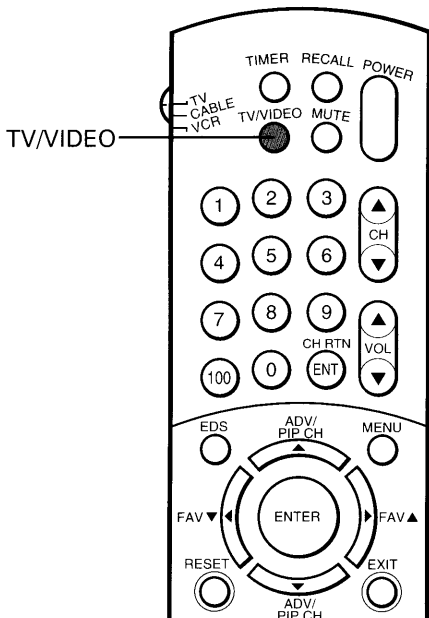
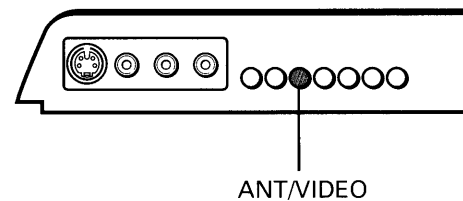
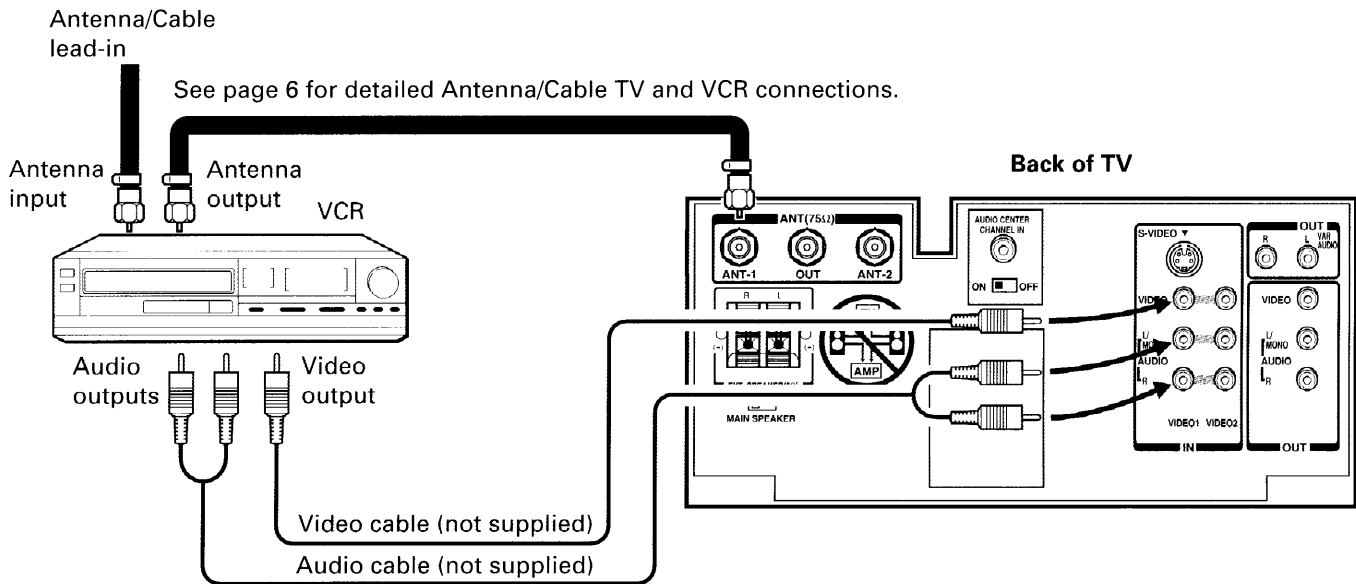


- ① ② **VIDEO 1/VIDEO 2/ VIDEO 3 IN Jacks** – provide for direct connection of video devices (VCR, laser disc player, video camera, etc.) with video/audio outputs. Connection details are on pages 41 and 43.
- ④ ⑤ **S-VIDEO IN Jacks** – provide for direct S-video connection from an **SVHS** VCR or a laser disc player. The TV's VIDEO 1/3 audio jacks can also be used to connect the VCR's audio cables. Connection details are on pages 42 and 43.
- ⑥ **VIDEO/AUDIO OUT Jacks** – provide fixed-level audio and video outputs from whatever is displayed on the screen. Connection details are on pages 44 and 45.
- ⑦ **VARIABLE AUDIO OUT Jacks** – feed volume-controlled stereo audio out from whatever is displayed on the screen, allows connection of audio amplifier and lets you adjust sound level with TV's Remote Control. Connection details are on page 45.
- ⑧ **EXTERNAL SPEAKER Terminals** – provide for direct connection of external speakers. Connection details are on page 47.
- ⑨ **MAIN SPEAKER Switch** – lets you turn off TV's built-in speakers so that sound will instead come through speakers connected to EXTERNAL SPEAKER terminals. See page 47 for details.
- ⑩ **AUDIO CENTER CHANNEL IN Jack** – provides for direct center channel connection from an audio receiver that delivers surround sound. Connection details are on page 46.

AUDIO CENTER CHANNEL ON/OFF Switch – lets you switch TV's built-in speakers to center channel speakers for the audio receiver connected to the AUDIO CENTER CHANNEL IN jack. See page 46.

Connecting a Standard VCR

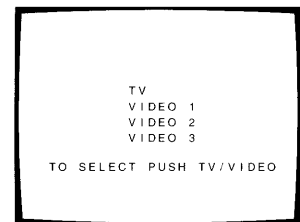
Connect the VIDEO 1 or VIDEO 2 IN jacks on the back of the TV to the video/audio output jacks of an installed VCR, Laser disc player, etc. for playback of video material.



Selecting video input source

To operate your TV and video equipment properly, refer to the instructions supplied with the video equipment.

- 1 Turn the TV and VCR on.
- 2 Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) to select the appropriate source. Each time you press the button, "TV", "VIDEO 1", "VIDEO 2" or "VIDEO 3" will be selected in order as the source to watch.
- 3 Operate your VCR normally.

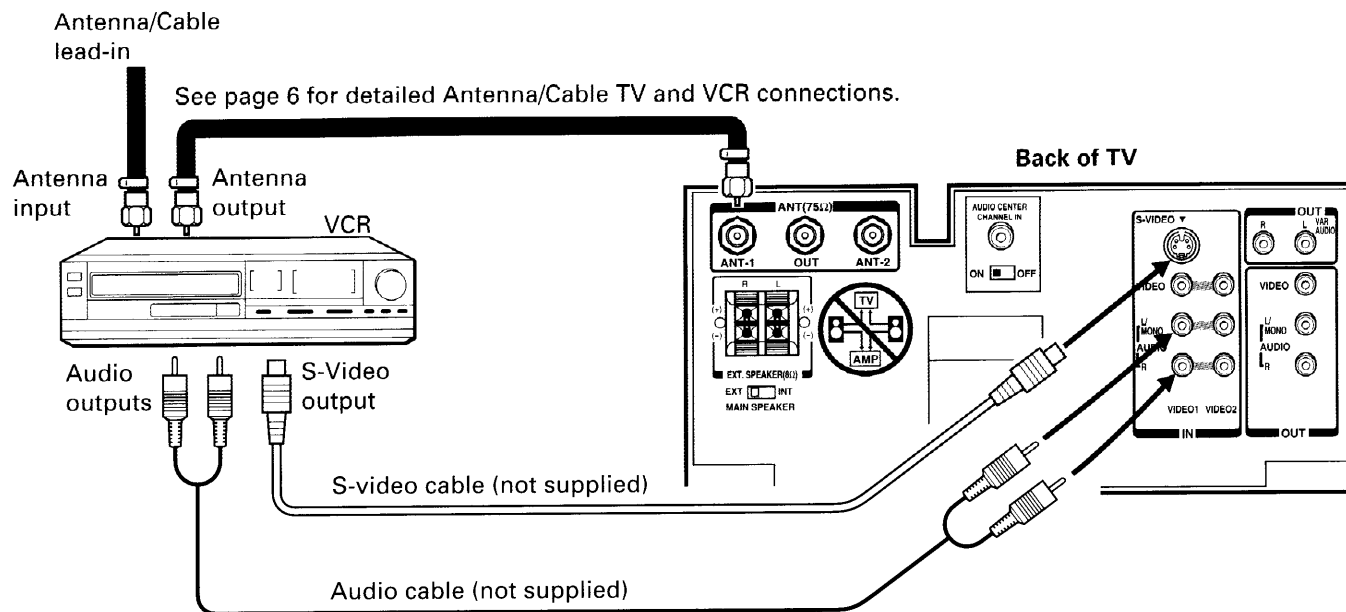


Notes:

- The VIDEO 2 IN jacks can also be used for connecting a second piece of video equipment with video/audio outputs. To view video from equipment connected to the VIDEO 2 IN jacks, select "VIDEO 2".
- If you connect a monaural VCR, connect the audio output of the VCR to the L/MONO jack of the VIDEO 1/2/3 IN jacks on the TV.

Connecting a VCR with an S-Video Jack

If you connect a VCR with an S-video jack to the S-VIDEO jack on the back of the TV, you must also connect the audio cables to the AUDIO jacks of the VIDEO 1 IN jacks on the back of the TV. The S-video cable only carries the video signal. Audio signals are separate.



Selecting video input source

- 1 Turn the TV and VCR on.
- 2 Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) to select "VIDEO 1".
- 3 Operate your VCR normally.

Notes:

- If you connect a monaural VCR, connect the audio output of the VCR to the L/MONO jack of the VIDEO 1 IN jacks on the TV set.
- When the S-video cable is connected to the S-VIDEO IN jack, the video cable (phono-type) should not be connected.
- The S-VIDEO jack accepts SEPARATED Luminance/Chrominance (Y-C) signals conforming to the NTSC standard.

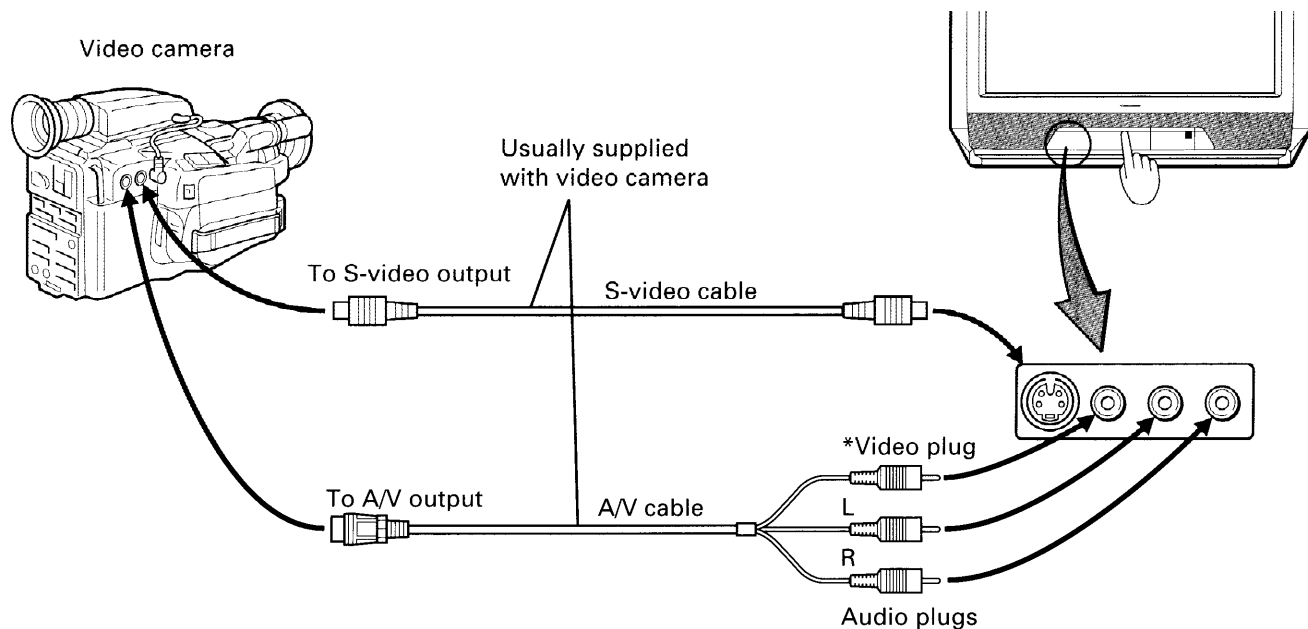
Connecting a Video Camera

This connection allows you to play back tapes in the video camera and watch them on the TV.

– If you have a video camera with an S-video jack, connect the S-video cable to the S-VIDEO jack of the VIDEO 3 IN jacks.

– If you have a standard video camera, connect the video cable to the VIDEO jack of the VIDEO 3 IN jacks.

With either video cable connection, connect an audio cable.



Selecting video sources

To operate your TV and video camera properly, refer to the instructions supplied with the connected video camera.

- 1 Turn the TV and the video camera on.
- 2 Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) to select "VIDEO 3".
- 3 Operate your video camera normally.

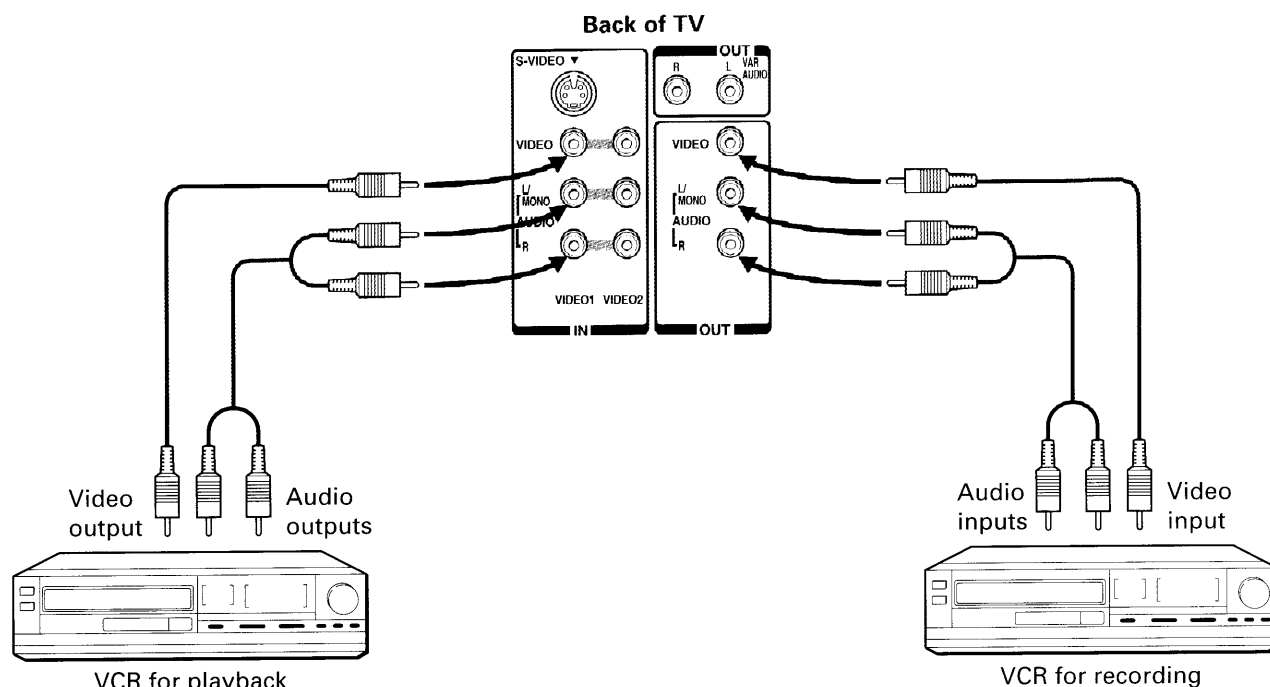
Notes:

- * When the S-video cable is connected to the S-VIDEO IN jack, the video plug does should not be connected.
- If you connect a monaural video camera, connect the audio output of the video camera to the L/MONO jack of the VIDEO 3 IN jacks.

Dubbing/Editing Video Tapes Using 2 VCR's

To dub or edit your own video tapes between one VCR and another, connect the VCR that will play to the input jacks (VIDEO 1, VIDEO 2 or VIDEO 3) on the TV. Then connect the output jacks on the back of the TV to the input jacks on the recording VCR.

Note: Do not connect one VCR to the output and input jacks on the back of the TV at the same time.



Monitoring your dubbing/editing

- 1 Turn the TV and both VCR's on.
- 2 Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) to select "VIDEO 1" (or "VIDEO 2", "VIDEO 3" depending on which input jacks are used for connecting the VCR for playback).
- 3 Set the VCR for recording to record mode and the VCR for playback to playback mode.
- 4 You can view the video tape from the VCR for playback on the TV screen while dubbing it with the VCR for recording.

CAUTION:

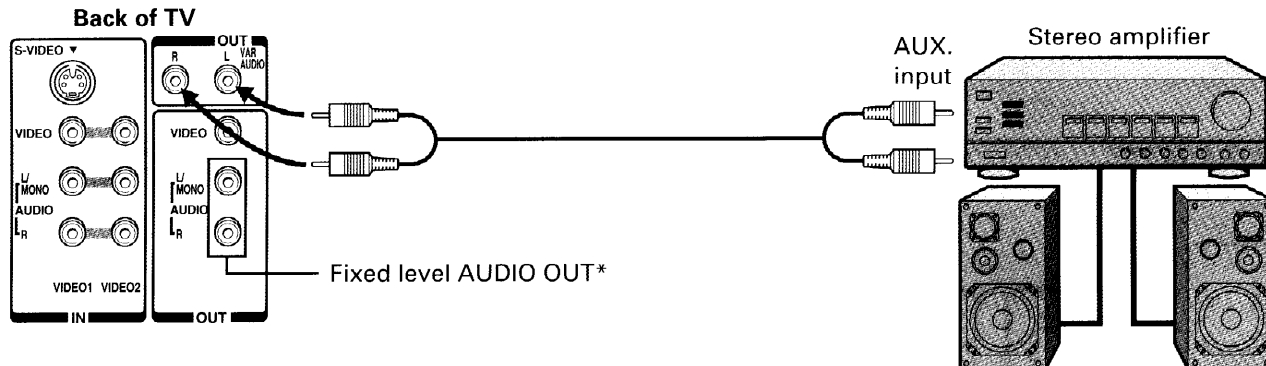
The unauthorized recording of television programs, video tapes and other materials may infringe upon the provisions of the copyright laws.

Notes:

- The input switch of VCR is normally in the TV position. Change the input switch of recording VCR to the external input position such as LINE or CAMERA when using the video/audio inputs of the VCR as above. Some VCR's automatically switch when the cables are plugged into the video/audio inputs.
- The PIP picture cannot be output from the VIDEO OUT jack.

Connecting an Audio Amplifier

Connect the VAR (variable) AUDIO OUT jacks to the auxiliary input jacks on a stereo amplifier. You can control the audio level using the TV's Remote Control.



Note:

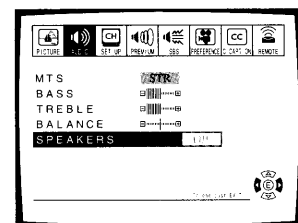
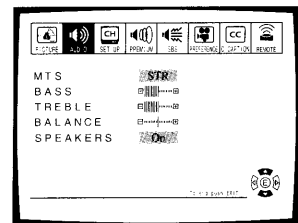
- * The "fixed level" audio signal through the AUDIO jacks of output jacks is also ideal for connecting an audio cassette recorder (or amplifier) to record sound from the TV. This constant audio signal is not affected by pressing the VOLUME ▼/▲ buttons on the TV or the TV's Remote Control.

Preparing for use

- 1 Turn the TV and the stereo amplifier on.
- 2 Adjust the VOLUME ▼/▲ buttons on the TV for a moderate listening level.
- 3 Disconnect the built-in speakers following the instructions to the right.
- 4 Adjust the volume control on the stereo amplifier for a moderate listening level.
- 5 Control of the sound can now be done using the VOLUME ▼/▲ and MUTE buttons on the TV's Remote Control, and using the AUDIO menu.

Disconnecting the built-in speakers

- 1 Press **MENU**, then press ► or ◀ until the **AUDIO** menu appears.
- 2 Press ▼ or ▲ until **"SPEAKERS"** is highlighted.
- 3 Press ► or ◀ to highlight **"Off"**.



To use the built-in speakers again
Select "On" in step 3 above.

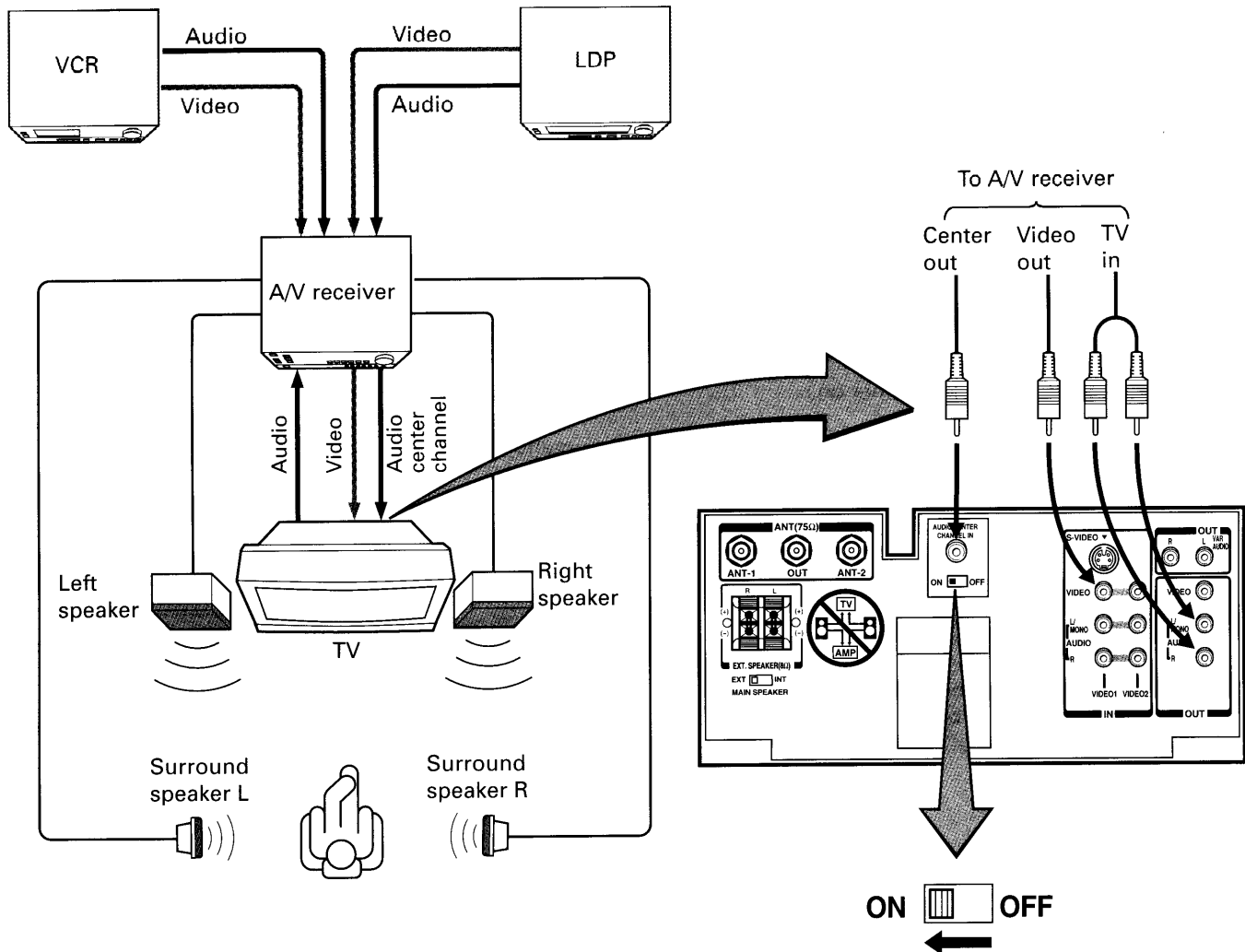
Using the TV's Speakers as Center Channel Speakers

If you are using a system which delivers Dolby Pro-Logic* surround sound, you will probably want to use the TV speakers as center channel speakers.

A center channel speaker adds to the realism of surround sound system such as Dolby Pro-Logic.

Note: Make sure that the TV is turned off, before connecting or disconnecting an audio cable to the CENTER CHANNEL IN jack.

Connection example — connecting an A/V receiver



Notes

- Refer to the instructions furnished with the connected equipment.

* "Dolby Pro-Logic" is a trademark of Dolby Laboratories Licensing Corporation.

When the AUDIO CENTER CHANNEL ON/OFF switch is in the "ON" position, the TV speakers will function only as the center channel speakers.

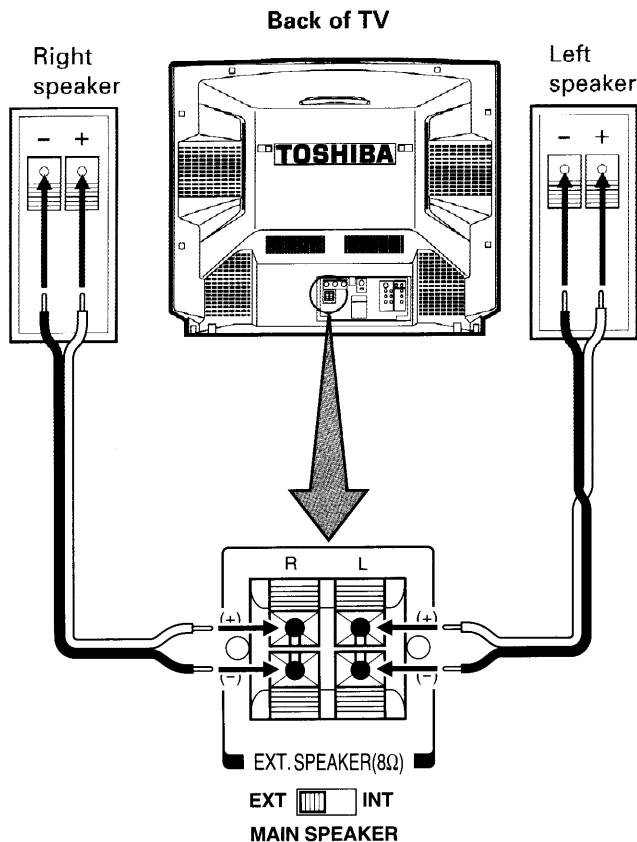
Adjust the volume for center channel speakers with the center level control on the A/V receiver.

If you use the TV speakers as normal speakers, set this switch to the "OFF" position.

Connecting External Speakers

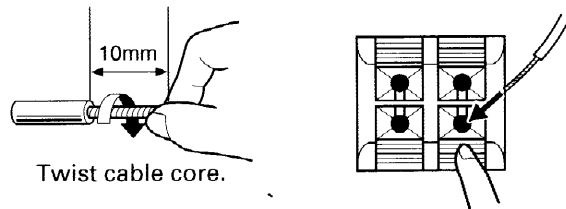
You can connect speakers to the EXTERNAL SPEAKER terminals on the TV set to enhance sound from the TV.

Before connecting the speakers, turn the TV off.



Preparing for use

- 1 Connect the speaker cables. While pressing the clamp, insert the cable core. Then, release the clamp. Match the right and left channels and +/– polarities of the TV speaker terminals with the external speakers.

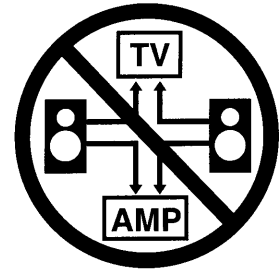


- 2 Set the MAIN SPEAKER switch to "EXT". The built-in TV speakers are switched off.



CAUTIONS:

- Do not connect external speakers to more than one audio source at a time. You will damage your equipment if you connect the same speaker system to both the TV and amplifier.
- Use only external speakers with an impedance rating of 8 ohms and input power of 10 W or greater.



Cleaning and Care

WARNING: TV sets use High Voltage. Do not try to remove the cabinet back. Refer servicing to qualified service personnel.

■ To clean the TV screen:

1. First remove the plug from the power outlet to avoid possible shock hazard.
2. Use a clean cellulose sponge or chamois cloth dampened with a solution of mild detergent and warm water to clean TV screen and trim. Do not use too much water on the TV screen. Water spills into the cabinet and may cause damage to the TV. Avoid excess water.
3. Remove any extra moisture with the same cloth or a dry one.

- To maintain the finish and appearance of the cabinet, polish it from time to time with a quality furniture polish.

Caution: Never use strong solvents such as thinner, benzene or other chemicals on or near cabinet, as they might damage the finish of the cabinet.

Specifications

TELEVISION SYSTEM:	NTSC standard
CHANNEL COVERAGE:	VHF; 2 through 13 UHF; 14 through 69 Cable TV; mid band (A-8 through A-1, A through I) super band (J through W) hyper band (AA through ZZ, AAA, BBB) ultra band (65 through 94, 100 through 125)
POWER SOURCE:	120V AC, 60Hz
POWER CONSUMPTION:	125W (average)
AUDIO POWER:	10W + 10W
SPEAKER TYPE:	Two 2-3/4 x 5-1/8 inches (70 x 130mm)
VIDEO/AUDIO TERMINALS:	S-VIDEO INPUT (VIDEO 1/VIDEO 3) Y-INPUT: 1V(p-p), 75 ohm, negative sync. C-INPUT: 0.286V(p-p) (burst signal), 75 ohm VIDEO 1/VIDEO 2/VIDEO 3 INPUT VIDEO: 1V(p-p), 75 ohm, negative sync. AUDIO: 150mV(rms) (30% modulation equivalent, 47k ohm) VIDEO/AUDIO OUTPUT VIDEO: 1V(p-p), 75 ohm, negative sync. AUDIO: 150mV(rms) (30% modulation equivalent, 4.7k ohm) VARIABLE: AUDIO OUTPUT 0-350mV(rms) (30% modulation equivalent, 4.7k ohm) AUDIO CENTER CHANNEL INPUT 1V(rms) (30% modulation equivalent, 10k ohm) EXTERNAL SPEAKER TERMINALS Accept speakers of impedance 8 ohm, input power 10W or greater
DIMENSIONS:	Width 36-39/64 inches (930mm) Height 30-47/64 inches (780.5mm) Depth 25-19/32 inches (650mm)
MASS:	176.4lbs (80.0kg)
SUPPLIED ACCESORIES	Remote Control with 2 "AAA" size batteries Antenna adaptor

Design and specifications are subject to change without notice.

Before Calling Service Personnel

Before calling service personnel, please check the following chart for a possible cause of the problem you are experiencing. A minor adjustment on your part may eliminate the problem and restore your TV reception.

Symptoms	Check	Adjustments
● No picture, no sound	<ul style="list-style-type: none"> ● Be sure power cord is plugged in. ● May be station trouble. ● Check antenna connections. ● Check antenna for broken wires. 	<ul style="list-style-type: none"> ● Press POWER. ● Try another channel.
● No sound, picture OK	<ul style="list-style-type: none"> ● May be station trouble. ● Check if "SPEAKERS" in AUDIO menu (page 45) or MAIN SPEAKER switch (page 47) is properly set. 	<ul style="list-style-type: none"> ● Try another channel. ● Adjust VOLUME.
● Poor sound, picture OK	<ul style="list-style-type: none"> ● May be station trouble. ● Check antenna connections. ● May be local interference from appliance. ● Check if "SPEAKERS" in AUDIO menu (page 45) or MAIN SPEAKER switch (page 47) is properly set. 	<ul style="list-style-type: none"> ● Try another channel. ● Adjust VOLUME. ● Adjust BASS, TREBLE, or BALANCE. ● Re-orient antenna.
<ul style="list-style-type: none"> ● Poor picture, sound OK ● Snowy picture ● Lines in picture ● Distorted picture ● Weak picture 	<ul style="list-style-type: none"> ● May be local interference from appliance. ● Check antenna connections. ● Check antenna for broken wires. ● May be station trouble. 	<ul style="list-style-type: none"> ● Try another channel. ● Adjust BRIGHTNESS. ● Adjust CONTRAST. ● Adjust SHARPNESS. ● Re-orient antenna.
● Poor reception of broadcast channels	<ul style="list-style-type: none"> ● Check antenna connections. ● Check antenna for broken wires. ● If VCR is connected, check TV/VCR switch. 	<ul style="list-style-type: none"> ● Try another channel. ● Re-orient antenna.
● No UHF, VHF OK	<ul style="list-style-type: none"> ● Be sure TV/CABLE function (page 17) is in "TV" mode. 	
● Unable to select a certain channel	<ul style="list-style-type: none"> ● That channel may be locked out with CH LOCK function (page 30), or erased with the ADD/ERASE function (page 18). 	
● Multiple images (ghosts)	<ul style="list-style-type: none"> ● May be station trouble. ● Check antenna connections. 	<ul style="list-style-type: none"> ● Try another channel. ● Re-orient antenna.
● Poor color or No color	<ul style="list-style-type: none"> ● May be station trouble. ● Check antenna connections. ● Check antenna for broken wires. ● May be local interference from appliance. ● Check if station is broadcasting in color. ● If you change the direction of the TV while the TV is activated, the picture may suffer from color shading. If so, turn off the TV and allow to cool for about 30 minutes, then turn on the TV again. The picture should improve. 	<ul style="list-style-type: none"> ● Try another channel. ● Re-orient antenna. ● Adjust TINT. ● Adjust COLOR.
● No stereo or SAP sound from a known MTS broadcast	<ul style="list-style-type: none"> ● Check if MTS function (page 25) is properly set. 	
● Remote Control does not work	<ul style="list-style-type: none"> ● Check if TV-CABLE-VCR switch is properly set. ● Be sure power cord is plugged in. ● Check battery in Remote Control. 	<ul style="list-style-type: none"> ● Replace batteries.

Limited United States Warranty

Toshiba America Consumer Products, Inc. ("TACP") and Toshiba Hawaii Inc. ("THI") make the following limited warranties. These limited warranties extend to the original consumer purchaser or any person receiving this set as a gift from the original consumer purchaser and to no other purchaser or transferee.

Limited One (1) Year Warranty

TACP and THI warrant this product and its parts against defects in materials or workmanship for a period of one (1) year after the date of original retail purchase. During this period, TACP and THI will repair a defective product or part, without charge to you. "Authorized TACP/THI service station personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the authorized TACP/THI service station for repair and returned to your home at no cost to you."

Limited Two (2) Year Warranty of Picture Tube

TACP and THI further warrant the picture tube in this product against defects in materials or workmanship for a period of two (2) years after the date of original retail purchase. During this period, TACP and THI will replace a defective picture tube without charge to you, except that if a defective picture tube is replaced after one (1) year from the date of the original retail purchase, you pay labor charges involved in the replacement.

Rental Units

The warranty for rental units begin with the first rental or thirty (30) days from the date of shipment to the rental firm, whichever comes first.

Commercial Units

Products sold and used for commercial use have a limited (90) day warranty for all parts, labor and picture tube.

Owner's Manual and Demographic Card.

You should read this owner's manual thoroughly before operating this product. You should complete and mail the enclosed demographic card within ten days after you, or the person who has given you this product as a gift, purchased this product. This is one way to enable TACP/THI to provide you with better customer service and improved products. Failure to return the card will not affect your rights under this warranty.

Your Responsibility

The above warranties are subject to the following conditions:

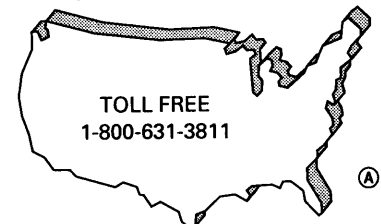
- (1) You must retain your bill of sale or provide other proof of purchase.
- (2) All warranty servicing of this product must be made by an Authorized TACP/THI Service Station.
- (3) **These warranties are effective only if the product is purchased and operated in the U.S.A. or Puerto Rico**
- (4) Labor service charges for set installation, set up, adjustment of customer controls and installation or repair of antenna systems are not covered by this warranty. Reception problems caused by inadequate antenna systems are your responsibility.
- (5) Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or to damage to products or parts caused by misuse, accident, damage caused by Acts of God, such as lightning or fluctuations in electric power, improper installation, improper maintenance or use in violation of instructions furnished by us; or to units which have had the serial number removed, altered, defaced or rendered illegible.

How to Obtain Warranty Service

If, after following all of the operating instructions in this manual and checking the section "BEFORE CALLING SERVICE PERSONNEL", you find that service is needed;

- (1) Call the TACP toll free number **1-800-631-3811** after you find a defective product or part -to find the nearest TOSHIBA Authorized Service Station.
- (2) Please present your bill of sale or other proof to the Authorized Service Station. "Authorized TACP/THI service station personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the TACP/THI authorized service station for repair and returned to your home at no cost to you."

IN THE CONTINENTAL UNITED STATES
Should your unit require service, Call



HAWAII

327 Kamakee Street,
Honolulu,
Hawaii 96814
(808) 521-5377

All warranties implied by state law, including the implied warranties of merchantability and fitness for a particular purpose, are expressly limited to the duration of the limited warranties set forth above. With the exception of any warranties implied by state law as hereby limited, the foregoing warranty is exclusive and in lieu of all other warranties, guarantees, agreements and similar obligations of manufacturer or seller with respect to the repair or replacement of any product or parts. In no event shall TACP or THI be liable for consequential or incidental damages.

No person, agent, distributor, dealer or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which action must be commenced to enforce any obligation of TACP or THI arising under this warranty or under any statute, or law of the United States or any state thereof, is hereby limited to 90 days from the date you discover or should have discovered, the defect. This limitation does not apply to implied warranties arising under state law.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state. Some states do not allow limitation on how long an implied warranty lasts, when an action may be brought, or the exclusion or limitation of incidental or consequential damages, so the above provisions may not apply to you.



ATTENTION CANADIAN CONSUMERS:

Canadian consumers are requested to complete the special Canadian "Warranty Registration Form" enclosed, and forward this completed form with a copy of bill of sale to TOSHIBA OF CANADA to "Register and Validate" their warranty. Products purchased in the U.S.A. and used in Canada are not covered by these warranties.

TOSHIBA AMERICA CONSUMER PRODUCTS, INC.

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WEST: 5490 E. FRANCIS ST., ONTARIO, CA 91761

SOUTHWEST: 1421 CHAMPION DRIVE, SUITE 304 CARROLLTON, TEXAS 75006

SOUTHEAST: 6115 JIMMY CARTER BLVD., SUITE C2, NORCROSS, GA 30071-4607

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TOSHIBA OF CANADA LTD.

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